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IN THREATENED AND HABITUAL ABORTION:
"...high-potency progestational agents [such as NORLUTIN] frequently have the power, when administered in adequate dosage, to arrest and suspend myometrial contractions incident to spontaneous abortion."* This is the conclusion of a group of investigators who studied patients with threatened (and in some cases habitual) abortion. The study group was compared with a control group which was treated with bed rest and mild sedation only. In this control group, the salvage rate was 15.5 per cent. In the group receiving NORLUTIN, 19 of 45 pregnancies were continued—a salvage rate of 42.2 per cent

PREGNANCY SALVAGE WITH NORLUTIN

	Control Group (Treated with bed rest and mild sedation)	Study Group (Treated with NORLUTIN)
Total number of pregnancies	297	45
Number of pregnancies salvaged	46	19
Percentage of pregnancies salvaged	15.5%	42.2%

Adapted from Hodgkinson *et al.**

Indications for NORLUTIN: Conditions involving deficiency of progesterone, such as primary and secondary amenorrhea, menstrual irregularity, functional uterine bleeding, endocrine infertility, habitual abortion, threatened abortion, premenstrual tension, and dysmenorrhea.

packaging: 5-mg. scored tablets, bottles of 30.

*Hodgkinson, C. P.; Igna, E. J., & Bukeavich, A. P.: *Ann. New York Acad. Sc.* 71:753 1958.

Editorials

Space Medicine

A new medical specialty, which is in every sense "far reaching," has suddenly appeared. The immediate clinical problems and research horizons of this field have suddenly been reprinted from the "annals of Buck Rogers" to more serious medical journals. Many pressing problems of space medicine were discussed at a recent symposium at the U. S. Naval Hospital in Philadelphia. This meeting was attended by several representatives of the University of Oklahoma School of Medicine, under the auspices of the MEND program, who submit the present report.

Practical applications of the giant centrifuge at the Johnsville Aviation Medical Acceleration Laboratory were described. This centrifuge, which is capable of spinning its gondola to a force of 100 G's, provides conditions of simulated flight of great value in preparing pilots of experimental aircraft. For example the X-15 has been flown more than 100 times though the ship never left the ground. It is noteworthy that many individuals have "crashed" the plane with loss of nothing except perhaps their ego. Such improvement in pilot performance has been shown that it is now predicted that the first actual flight will be successful. Valuable data have been gained in determining the human tolerances of supersonic flight.

Plans for the first flight to Mars were discussed with an air reminiscent of routing an individual between Oklahoma City and Tulsa in the days before the Turnpike. This planet was selected as the target of the first interplanetary flight because of its advantageous features of favorable orbit, atmosphere, gravitational field and temperature.

Though Mars is *only* 44 million miles from Earth at its closest pass, the route is calculated to traverse 100 million miles, requiring two years and 239 days for completion of the round trip. This includes a wait of approximately 400 days on Mars until the relative position of the planets is suitable for return to earth.

Acceleration forces encountered during the flight are calculated not to exceed 5 to 10 G's, which can be tolerated by the human being. Perhaps of more concern is the lack of gravitational forces operative in outer space. This weightlessness presents many problems of physical and psychologic adjustment. The launching platform to be situated some 5000 miles from the earth will be in the form of a wheel which will be spun to provide an artificial gravity. Thus out will be down and in will be up. Perhaps the space ships also will be spun to provide gravitational forces as well as to equalize temperature.

A crew of 12 men has been considered optimal for the trip. The psychologic adjustment of these individuals to each other and to their odd environment in space will present great problems. They must adjust to the difficulties of working in heavy space suits or capsules which will provide a suitable micro-atmosphere as well as tolerable protection against the intense heat, cold and radiant energy which will be encountered.

A suitable artificial atmosphere for the long flight in a virtual vacuum, presents many problems. While 100% oxygen offers the advantage of reduction in pay-load it causes pulmonary irritation, alveolar collapse and other aspects of oxygen poisoning. In addition it presents a fire hazard. Controlled anoxia has been considered as a possible means of obviating these disadvantages and providing some degree of protection against ionizing radiation and explosive decompression.

Food supply for the long journey will be critical. The necessity for restriction of weight at take off would be best met by a no-residue diet. It is calculated that 22 pounds of food along with 66 pounds of oxy-

gen and 99 pounds of water will be required for each individual monthly. An associated problem is concerned with the re-utilization of wastes. For example, oxygen can be obtained from carbon dioxide by photosynthesis using algae, though this would require 90 liters of algae solution to supply sufficient oxygen for each man. Conversion of nitrogenous wastes to food stuffs must be considered. Successful elimination of noxious toxic products, particularly ammonia, must be accomplished. Recovery of water from urine has been attempted using techniques of freezing, distillation, electro-osmosis, adsorption, precipitation, ion exchange and enzyme (urease), none of which methods are entirely satisfactory. Evaporative water will be recovered by dehumidification procedures.

Provision of a satisfactory physical environment, still leaves the problem of providing such little niceties of life as night and day and the whiling away of years under weightless sterile circumstances. It is obvious that a good many pharmacologic agents, many of which are not yet available, will be necessary to make life endurable under these exceptional circumstances.

Radiation levels have been found to be extremely high (1000 times human tolerance) in the regions traversed by the explorer satellites. The degree of protection necessary for personnel beyond this zone is not known and might present another formidable problem. It is possible that polar tunnels in which radiation is minimal would provide relatively safe routes for take off and return.

These are but a few of the problems that confront space doctors.

The space engineers predict a successful manned flight to Mars within 20 to 30 years. All their calculations are based on the use of presently available material and techniques. It is conceivable that new developments might even shorten this projected schedule. The space engineers appear to assume that the biologic problems of space flight will have been met. This is the challenge which faces the space physician.—*J. W. H. Smith, M.D., R. W. Payne, M.D., P. W. Smith, Ph.D.*

Oklahoma's Medical History

Within the life span of a man Oklahoma has progressed from frontier wilderness to the missile age. The profession of medicine in this state has kept step with this advance. Its achievements in clinical medicine and surgery; in advancement of public health; in research; and in organization, both internally through the O.S.M.A., and governmentally through our Board of Medical Examiners, parallel the advances of its sisters Agriculture, Industry, Finance and Manufacture.

The history of medicine since Oklahoma Statehood is something of which the profession may well be proud but unfortunately such a chronicle does not exist.

The Oklahoma State Medical Assistants Society recognized this void and appropriated $300.00 in 1955 to record on tape the early day experiences of our senior physicians still alive. A considerable amount of priceless material has been assembled. This has been placed in the care of the University of Oklahoma Library. Our association has deposited its early records and *Journals* with the same custodian.

Recently the University Archivist, Doctor A. M. Gibson, a member of the University Department of History, has proposed that the medical history of Indian Territory and Oklahoma would be an admirable subject for some graduate student to develop as his doctoral thesis.

The medical assistants were enthusiastic. They offered to award a grant-in-aid to the project and expressed the hope that Oklahoma Medicine would co-sponsor the project. They envisioned that such a history might be published, all profits to be given to some charitable medical organization.

There has been some objection that such a history would (1) perhaps offend some surviving physician or relative, (2) be libelous, or (3) incur taxation of Association funds because of any book royalties accruing to it.

The Editorial Board cannot conceive that any person mature and responsible enough to be seeking a Ph.D. degree in contemporary history would play loosely with crit-

ical incidents in his thesis. Nor can it envision that the doctoral committee of the University to whom this thesis would be presented would permit the inclusion of any material of bad taste or libelous nature. If, indeed, there be any.

Finally the Board is of the opinion that should the thesis be published in book form sales would be to such a limited number of people interested in the topic that the publisher would be lucky to pay for a single edition.

In 1955 the Oklahoma State Dental Association employed a professional writer-historian to do just such a job. The result[1] was a well written, well printed book that affords some most entertaining and interesting reading. It is high time, now that we are half a century old, that we do the same. —*J.M.*

REFERENCE

1. Clark, J. Stanley. Open Wider, Please. Norman: University of Oklahoma Press 1955.

A Basic Human Right

A patient of mine wrote the following letter to his representative to explain his own opinion and attitude toward the current issue of repeal that will come to our decision some time this year.

Doctors, as well as all other thinking citizens, must seriously consider every aspect of this vital issue which is confronting the electorate. The writer has presented a rational and lucid exposition of this problem; a presentation which is in such accord with my own thinking that I am taking this means of presenting it to others in the profession.—*D. W. B.*

Representative Cleta John Rogers
House of State Representatives
State Capitol Building
Oklahoma City, Oklahoma

Dear Representative Rogers:

I begin this letter with extreme regret that I should have to write at all. It seems hardly consistant with free government that a citizen should have to urge his representative to vote for the recovery of a basic human right. I refer to the right to buy, possess, and drink alcoholic beverages.

It seems that prohibition of liquor leads to one of only two possible conclusions: Either government has the right to determine when its citizens would engage or refrain from the practice of something which is neither good nor evil in itself; or, if alcohol is evil in itself, it should not be tolerated under any circumstances. I think a free man would deny the first proposition because it is not the avowed function of democratic government to arbitrarily decide when its citizen shall possess or use a commodity which is neutral. And I think a God believing man would deny the second, because it implies that our Maker has created something intrinsically evil. This is predicating a contradiction in the Nature of God.

Please do not interpret this to mean that I am advocating debauchery or anarchy. On the contrary, I think every man has the obligation to exercise judgment in the use of anything, which by its misuse could bring perdition. But to say "that the misuse of a thing is evil," is a different matter from saying "the use of a thing is evil."

The logic of this view does not propose (as some would contend) that the indiscriminate use of narcotics would be justified. The use of narcotics is no more evil in itself than liquor, but becomes so when misused. And to insure against its misuse the prescription of a medical doctor is necessary. By so restricting, government is simply maintaining that doctors, due to an esoteric knowledge of medicine have superior judgment in determining what will be the predicted results of this usage.

Such is not the case with liquor. Any intelligent man with normal judgment should know, and is obligated in conscience to know, when he can or cannot take a drink without harmful effects. To say that we must restrict all because of the bad judgment of a few, is analogous to saying, "we must not allow citizens to vote because some will use bad judgment."

I urge you to use your influence to abolish

(Continued on Page 206)

Scientific Articles

The Problem of Perinatal Morbidity and Mortality

An outline for implementing a program to study and do more about perinatal morbidity and mortality.

HARRIS D. RILEY, Jr., M.D.

Harris D. Riley, Jr., M.D., is Professor and Chairman, Department of Pediatrics, at the University of Oklahoma School of Medicine. He graduated from Vanderbilt University in 1948. Doctor Riley served on the Pediatric Service at Vanderbilt University Hospital and was Assistant Medical Director of the Poliomyelitis Center at Vanderbilt.

Doctor Riley served as consultant to Air Force and Army Hospitals in Tennessee and Kentucky as well as to the Middle Tennessee Tuberculosis Hospital and the National Foundation for Infantile Paralysis. He was also Chairman of the Rheumatic Fever Committee of the Middle Tennessee Heart Association. He is certified by the American Board of Pediatrics.

This paper is from the Department of Pediatrics and The Children's Memorial Hospital of the University of Oklahoma Medical Center, Oklahoma City, Oklahoma.

DR. MARTHA ELIOT[1] has stated that "Death is associated with birth and being born in the United States more often than it is with any disease except heart disease, cancer and cerebral hemorrhage." Recent national statistics show a continuous and significant decrease in maternal deaths, whereas the rate of decrease of neonatal deaths is proportionately much less. Because these deaths are among the most tragic since they cut off life at its beginning, and because the infant mortality rate is generally recognized to be one of the best single indices of a given community's health status, it is essential to examine the problem of perinatal loss more carefully. Furthermore, mortality is not the whole toll in childbearing and being born. The aftermath for the mother may be chronic illness or repeated reproductive failure. For the infant it may be irreparable damage as manifested by congenital malformations, cerebral palsy, mental retardation and epilepsy.

The term "perinatal," as used here, embraces the interval between the end of the twentieth week of fetal life and the twenty-seventh day after birth.

For too long, however, late fetal and early neonatal deaths have been considered separately. To approach the heart of the problem, the whole problem of reproductive wastage must be considered. This includes, in addition to perinatal deaths, ectopic gestations and early fetal deaths (abortions). Although the scope of reproductive wastage can only be estimated, it is very likely that the total number of fetal deaths is more nearly 500,000 annually than the 75,000 to 80,000 which are reported.[2] Including the sublethal continuum characterized by cerebral palsy, mental retardation, and similar handicaps, Anderson[3] concluded that total

human reproductive failure in the United States approached 800,595 losses in 1950 when the total births were 31,622,411. In 1957 this estimate rose to 883,200.[4] Reproductive failure ranked above the three leading causes of death in the United States in 1950. Thus, perinatal loss is a problem that concerns physicians, nurses, public health workers, and, through its impact upon our socio-economic status, political scientists, nutritionists, economists, sociologists, and the general public. It is important that the cooperative efforts of all concerned at the various levels be coordinated in attacking this problem.

Through the years, tremendous progress has been made in saving lives of infants. Mortality rates for infants under one year of age in Oklahoma in 1957 was 25.5 per 1,000 live births, 37 per cent of what it was only thirty years ago. However, the larger part of this reduction has come about in the one to eleven month age group where the causes of mortality were more readily susceptible to control measures. A comparison in the reduction in mortality under one month of age and one to eleven months of age reveals that the 1957 neonatal mortality rate of 18.2 is still 50.3 per cent of what it was in 1928, while the one to eleven month mortality rate of 7.3 is only 22.3 per cent of that in 1928.[9] Such figures make is readily apparent that the first month of life is the critical period of time for the prevention of death. Most physicians interested in problems of the newborn infant and his survival agree that an irreducible minimum in neonatal or perinatal mortality has not been reached.

For these reasons attention is being focused on this problem in Oklahoma. Through a cooperative program* between the Maternal and Child Health Division of the State Department of Health and the University of Oklahoma School of Medicine an organized approach to the problems of the perinatal period is being made.

*Supported by a grant from the Oklahoma State Department of Health.

TABLE 1

Classification of Perinatal Death (Infants 1000 Grams and Over) Johns Hopkins Hospital, 1937-1943 (2)

Cause of Death	Fetal Deaths	Neonatal Deaths	Perinatal Deaths	
			Number	Per Cent
Anoxia	249	102	351	33.7
Placenta	92	40	132	
Cord	35	10	45	
Maternal Complications	27	9	36	
Complications of Labor	66	20	86	
Other	29	23	52	
No Abnormal State	228	106	334	32.0
Without Maternal Disease	169	84	253	
With Toxemia	45	13	58	
Other Acute or Chronic Disease	0	3	3	
Diabetes	14	6	20	
Birth Injury	24	78	102	9.8
Malformation	42	56	98	9.4
Abnormal Pulmonary Ventilation	0	74	74	7.1
Infection	10	48	58	5.6
Syphilis	7	6	13	
Other Infection	3	42	45	
Erythroblastosis	6	11	17	1.6
Other Conditions or Causes	8	1	9	0.8
TOTAL	567	476	1,043	100.0

Causes of Perinatal Mortality

In order to attack this problem we must first study the chief causes of death. When total perinatal loss is considered, anoxia is responsible for more deaths than any other etiologic factor. Table 1 shows the multiple and heterogeneous causes of anoxia. However, it is readily apparent that most of these factors operate before or during birth. Mortality rates and causes in the neonatal period are shown in Table 2. Prematurity, postnatal respiratory problems, birth injuries, congenital malformation and hemolytic diseases of the newborn are the chief causes of death.[12] These conditions nearly all have their origin before or during birth and in many cases are associated with morbidity in the mother.

Program of Preventability

How can we attack the problem of carrying infants safely through the perinatal period? Careful analyses have shown that 35 per cent of perinatal deaths are preventable.[7] It should be recalled at this point that our attention should be directed toward the problem of human reproductive failure or wastage rather than solely to deaths in the first 28 days of life. More and more evidence is accumulating that the same conditions that bring death to infants before, during and soon after birth also may lead to chronic illness and handicap in many infants who survive. An accurate figure as to how many children may suffer such results is not available, but a rough estimate is that approximately 315,000 children have cerebral palsy, 310,000 have epilepsy and 1,-

TABLE 2

Neonatal Mortality Rate per 1,000 Live Births by Age and Main Causes of Death, United States, 1955* (1)

Cause of Death	Neonatal Death Rate**		
	Total	Under 1 Wk.	1-3 Wk.
All causes	19.1	17.0	2.1
Certain diseases of early infancy	15.4	14.2	1.2
With immaturity	11.4	10.8	0.6
Without mention of immaturity	4.0	3.4	0.6
Immaturity unqualified	5.2	5.0	0.2
Postnatal asphyxia and atelectasis	4.3	4.1	0.2
Birth injuries	2.9	2.8	0.1
Pneumonia of newborn	0.8	0.4	0.4
Hemolytic disease of newborn (erythroblastosis)	0.6	0.6	0.0
Neonatal disorders arising from maternal toxemia	0.1	0.1	0.0
Hemorrhagic disease of newborn	0.2	0.2	0.0
Diarrhea of newborn	0.1	0.0	0.1
Other and Ill-defined diseases of early infancy, including nutritional maladjustment	1.2	1.0	0.2
Congenital malformations	2.5	1.9	0.6
Influenza and pneumonia (except pneumonia of newborn)	0.0	0.0	0.0
All other diseases of respiratory system	0.3	0.3	0.0
All infective and parasitic diseases	0.1	0.0	0.1
Gastritis, duodenitis, enteritis, and colitis (except diarrhea of newborn)	0.0	0.0	0.0
Accidental mechanical suffocation in bed or cradle	0.0	0.0	0.0
All other accidental causes	0.1	0.1	0.0
Other specified conditions	0.4	0.3	0.1
Symptoms and ill-defined conditions	0.3	0.2	0.1

*Exclusive of fetal deaths
**Under 28 days

500,000 mental retardation. Something like 285,000 infants with congenital malformations are born each year.[1]

With these facts in mind, we can outline some of the basic needs in a preventive program concerning perinatal loss.

1. *Better understanding of the reproductive process calls for many different approaches.*

There is need for continuation of animal research and it's application of these findings to human pathology. This can best be gained by multidisciplinary approach with participation and utilization of contributions from genetics, chemistry, biophysics, enzymology, microbiology and other biological sciences.

2. *Improved prenatal care, especially among those patients most likely to neglect this important aspect of obstetrical care, is of paramount importance.*

In addition to attention to economic barriers which may prevent prenatal care, education of the pregnant woman of the teratogenic hazards of the early months of pregnancy must be accomplished.

Another approach lies in pathological, clinical and laboratory correlations of untoward conditions during pregnancy with follow-up studies of surviving infants. For example, very little is known concerning the causes of bleeding in early pregnancy and the effect on the fetus. As already mentioned, there is a tremendous void in our knowledge of the significant events associated with premature labor. While there has been a striking reduction in the maternal mortality rate (between 1915 and 1955 maternal deaths have been reduced from 60 to 5 per 10,000 live births), it has become apparent that many illnesses occurring in the mother during pregnancy may be sublethal as regards the fetus resulting in viable but handicapped infants.

3. *Concentration of attention on babies who are in difficulty at or soon after birth and specialized care of conditions which commonly cause death in the neonatal period.*

Over half of the neonatal deaths (52 per cent) occur during the first day of life, 39 per cent in the first week, 6 per cent in the second, 3 per cent in the third, and the remaining 2 per cent in the last week of the neonatal period. Of the 69,153 fetal deaths recorded in 1955 in pregnancies of 20 or more weeks, 32 per cent were in those reported as enduring 40 or more weeks.[1]

Thus, it is quite clear that if perinatal mortality is to be reduced, more attention should be devoted to the first three days after birth.

In order to focus attention on newborn infants with difficulty from the moment of birth, some centers have adopted an objective standardized method of assessing and recording the baby's condition at birth.[11] On the basis of such a program, a specialized treatment unit staffed around the clock by trained nursing personnel, continuous pediatric coverage, and with all necessary emergency diagnostic and treatment facilities such as recovery rooms in modern operating room areas is desirable.

4. *Early recognition of infection.*

Neonatal infections may be acquired in utero or may originate in the postnatal period. Recognition is often difficult but must be prompt if there is to be hope of survival or prevention of dissemination to other infants. There must be a high index of suspicion of infection in any newborn infant who is listless, eats poorly, has respiratory difficulty or has jaundice in the presence of some or all of the foregoing symptoms. Since differential diagnosis is difficult in the first two or three days of life, treatment should be initiated as soon as the necessary diagnostic procedures (blood and other cultures, etc.) have been obtained. Judicious use of antimicrobial agents based on the probable offending organism is essential.

Staphylococcal infections in newborn nurseries have become a major problem in recent years.[10] The importance of detecting

carriers among personnel as well as among infants cannot be overemphasized.

5. *Prompt recognition and treatment of hemolytic disease and posthemorrhagic states of the newborn.*

In order to prevent deaths and kernicterus, the diagnosis of erythroblastosis must be anticipated. In addition to adequate prenatal screening procedures (blood grouping and typing, antibody determinations, etc.), deliveries in which erythroblastosis in the infant is anticipated should be conducted in hospitals equipped to manage such infants. Nurses should be educated that jaundice occurring in the first 24 hours after birth is in most cases abnormal and physicians must remember that erythroblastosis can result from major group (ABO) as well as Rh incompatibility. The efficacy of exchange transfusion is now well established and is an important means of reducing morbidity and mortality in this disease.

Many physicians are not aware of the problem of posthemorrhagic shock in the newborn. However, it can be anticipated since it most commonly occurs in infants born by cesarean section, and in association with multiple births. These infants are usually live-born and are salvageable by prompt replacement therapy.[6]

6. *Prevention of prematurity.*

The premature infant accounts for 50 to 75 per cent of our neonatal mortality rate. At least three out of five neonatal deaths are in infants whose mothers' pregnancies do not run to normal term. Premature delivery increases the risk of death in the newborn period twenty times.[1] These figures will not show any appreciable change until obstetricians discover why apparently normal pregnancies terminate prematurely. Judging by the data on birth weights, little gain has been made in preventing premature births. In fact, in New York City, between 1948 and 1955, there has been a statistically significant increase in the number of premature births.[5] Fundamental advances in our knowledge of the physiology of the premature infant's respiratory, vascular and absorbtive mechanisms must also be made. Until this occurs, no physician can claim any special technique which will reduce further the loss from hyaline membrane disease, atelectasis and intraventricular hemorrhage. Neither can he alter the immature stage of organ development which is part of prematurity itself.[11]

Understanding of the total causation of prematurity would be furthered by socioeconomic as well as medical research. Poor nutrition and other outgrowths of socioeconomic inadequacy contribute to prematurity. There is a continued need for research in endometrial insufficiency, physiology of the uterus, habitual abortions and the structure and physiology of the placenta.

A reduction in prematurity would not only significantly reduce perinatal mortality but also the incidence of chronically handicapped children since the incidence of congenital malformations and cerebral palsy is significantly higher in premature as compared to full-term infants.[8]

7. *Other basic problems that need to be solved in order to further reduce deaths are:*

A. Further knowledge of the respiratory distress syndrome, especially that associated with hyaline membrane disease.

B. Earlier recognition of fetal distress. Fetal distress is usually related to anoxia. It is likely that early recognition will depend on improvements in fetal electrocardiology, fetal electroencephalography and more adequate study of placental physiology.

C. A more adequate understanding of the causes of congenital malformations.

8. *More accurate diagnosis of cause of death.*

Too many physicians feel that nothing can be learned from autopsy studies of fetal or neonatal deaths. Nothing could be further from the truth. Many of the advances that have been made in neonatal medicine have stemmed from autopsy studies. As careful

pathological data is accumulated the number of cases in which no specific cause of death can be assigned narrows rapidly. It is important for pathologists not only in large medical centers but in hospitals to develop interest and experience in conducting thorough necropsy studies of perinatal deaths.

9. *Increase in well trained personnel.*

There is an urgent need for re-emphasis in the curriculum of the problems of the perinatal period. This should start with the medical student, but particular emphasis should also be given to the intern and resident staff.

There is also a great need for increase in skilled nursing personnel to care for newborn infants, both full term and premature. In the care of premature infants nothing approaches the value of a well trained and experienced nurse.

10. *Improved nursery facilities for both full-term and premature infants.*

Needless to say, the salvage rate among small premature infants can be increased only if proper and adequate facilities are available. This includes the entire organization and structural layout of the newborn nurseries, provision for adequate oxygen and humidification equipment, resuscitation equipment among others. There appears to be many bona-fide reasons to re-evaluate our present concepts of the geographical and physical requirements of newborn nurseries.

11. *Improvement in medical records.*

Improvement in the medical records of both the mother and infant is needed for more adequate analysis of the perinatal problem. This includes careful questioning concerning illnesses and possible insults during pregnancy, the inclusion of social and economic factors and an adequate recording of the infant's status and course from birth.

12. *Coordination of the medical and paramedical team and the conduct of regular staff meetings.*

It is readily apparent that reduction in perinatal loss is not the sole responsibility of any one medical specialty and better teamwork between workers in the field—general practitioners, obstetricians, pediatricians, pathologists, anesthesiologists, public health workers, hospital administrators, and others —must be achieved. This can often be effected through a well organized perinatal conference. This meeting provides an opportunity for the "team" to sit down together and review case histories—actual occurrences in their own hospitals—where infants died or did not do well. Other specialists with knowledge of physiology, genetics, microbiology, and others can be brought in as indicated.

Summary

The significance of perinatal morbidity and mortality as a health problem is reviewed. Suggestions concerning prevention and management of these problems are outlined.

REFERENCES

1. Eliot, M. M.: Deaths around Birth—the National Score. J.A.M.A. 167: 945, 1958.

2. Nesbitt, R. E. L.: Perinatal Loss in Modern Obstetrics. Philadelphia, F. A. Davis Co., 1957.

3. Anderson, G. W.: Current Trends in the Pathology of Reproductive Failure. Am. J. Pub. Health. 45: 1259, 1955.

4. Anderson, G. W.: Research on Reproductive Wastage. Am. J. Pub. Health. 47: 1542, 1957.

5. Baumgartner, L., and J. Pakter: Challenge of Fetal Loss, Prematurity, and Infant Mortality—Assessing the Local Situation. J.A.M.A. 167: 936, 1958.

6. Riley, H. D., Jr., and H. N. Kirkman: Posthemorrhagic Anemia and Shock in the Newborn. To appear in Pediatrics.

7. New York Academy of Medicine: Perinatal Mortality in New York City, Responsible Factors: Study of 995 Deaths. Cambridge, Mass., Harvard Univ. Press, 1955.

8. Wallace, H. M., L. Hoenig, and H. Rich: Newborn Infants with Congenital Malformations or Birth Injuries. A.M.A.J. Dis. Child. 91: 529, 1956.

9. Division of Vital Statistics, Oklahoma State Department of Health.

10. Riley, H. D., Jr.:Epidemiological Studies of Staphylococcal Disease in Newborn Infants. In preparation.

11. Medovy, H., and J. H. Briggs: Reduction in Neonatal Mortality: The Present and the Future. Pediat. Cl. No. America, p. 259, May 1958.

12. Bundesen, H. N., E. L. Potter, W. I. Fishbein, F. C. Bauer, and G. V. Plotzke: Progress in the Prevention of Needles Deaths. Annual Report of the Chicago Health Department, 1951.

800 N.E. 13th, Oklahoma City, Oklahoma

The Use of a New Surfactant (Superinone*) With a Purified Hemicellulose in the Treatment of Chronic Constipation

A. R. STOUGH, M.D.

Since graduating from the University of Tennessee College of Medicine in 1936, A. R. Stough, M.D., practiced in Oklahoma City and Tecumseh before locating in McAlester. He is engaged in general practice, with a special interest in Urology.

Doctor Stough is a member of the South Central Section of the American Urological Association and the American Society of Clinical Hypnosis.

ALTHOUGH GENERALLY CONSIDERED as a relatively simple ailment to the physician, constipation may present itself as a very disturbing condition to the patient. The latter, because of misunderstanding, is often disturbed more by a delay in what he believes to be an essential time interval between bowel movements than he is with the condition per se.

Since constipation, unless due to an organic disorder, is neither difficult to manage nor likely to present serious symptoms, a simple non-drastic medication to assist the patient is the preferred method of management. Irritating or harsh laxatives or cathartics are generally not indicated and indeed may be harmful in the sense that they produce an unnatural bowel response and tend to focus undue attention upon bowel activity which may have already caused the patient unnecessary concern.

One of the most frequent causes of constipation is the failure to develop a proper bowel habit pattern or to include foods in the diet which tend to promote adequate and regular bowel activity. For this reason, a simple, gentle, bulking and softening agent offers the patient a natural remedy. We have recently had the opportunity to study two preparations of this type. A description of each and their mode of action is given below.**

Mucilose-Super flakes differs from the powder in that it does not contain dextrose and therefore yields more Mucilose per unit weight.

Mucilose is a highly purified hemicellulose prepared from psyllium seed with an affinity for fluid which gives it a characteristic bulking property. This coupled with its emollient action brings about a gentle stimulus to a normal peristaltic response.[1] Agents of this type have been extensively employed clinically for many years.[2-6] The bland and emollient[7] nature of Mucilose is highly desirable, particularly in the presence of an irritable or spastic bowel. It should be noted, how-

*Trademark, brand of tyloxypal.

**The material used in this study was supplied by the Medical Research Department of Winthrop Laboratories, New York.

Results Observed in a Group Treated With Mucilose-Super Powder

No. of Pts.	Age (yrs.)	Dose (tsp.)	Duration of R_x	Onset of Effect in Hrs.					Satis-factory	Unsatis-factory
				4-6	5-6	6-8	8-10	8-12		
24	30-57	1-2 b.i.d.	5 days	3	3	16	2	1	22	2*

*Loose stool felt to be due to excessive dose of the preparation in these two patients.

ever, that the bulking tendency of the colloid makes it necessary to administer an adequate amount of water with and following the preparation to promote its passage into the small bowel.[8] If too little fluid is taken, an unduly mucilagenous mass may result.

Superinone, the other active ingredient in each preparation, being a surface active agent, lowers surface tension which facilitates its permeation of the hardened stool. Its emulsifying quality tends to bring about a more thorough mixing of intestinal fluid with fecal content, adding to the softening action upon stool. Finally, the low toxicity of this compound[9, 10] added to its gentle and natural-like action gives it a wide field of usefulness in various types of constipation when combined with a demulcent hydrogel such as Mucilose.

Method and Materials

To carry out this study 101 chronical or periodically constipated individuals were chosen from an institutionalized group. All were adult males. A uniform schedule of administering Mucilose-Super powder or *flakes over a period of five days in a dose* of one or two teaspoonsful twice daily after meals (except in two cases) permitted a fairly comparable means of assessing the onset of effect in each individual.

Each dose of the preparation was administered with 14 ounces of water. A record of results included the degree of efficiency of the compound in producing adequate bowel movement, time required to act, type of stool obtained, and side effects if these were experienced.

Results

Of 24 patients who received the preparation containing dextrose during the study period, all but two obtained satisfactory bowel elimination without cramping or flatuence.

Although two patients noted a watery-type stool during the course of therapy, this was not severe and probably could be attributed to the fact that no attempt was made to adjust dosage in accordance with patient response within the five-day test period. The remainder of the group obtained either a normal or somewhat softened stool during the period of observation.

As noted in the table above the majority of patients reported that it required six to eight hours for the preparation to act, however, a few found that eight to 12 hours elapsed before a response occurred. This delay in the onset of effect of the preparation was considered to be one of its favorable attributes.

Of the remaining 77 patients of the total group, a satisfactory response over approximately the same time intervals was obtained in 74.

Side effects occurred in a higher percentage in this group, however, these were of a minor gastrointestinal character. The fact that the dose and length of the study were standardized during the investigation could in large measure account for this.

Discussion

In the present study two new demulcent stool softeners were evaluated in a group of patients with constipation primarily of the chronic type. Since poor bowel habit is likely to have been the basic cause of difficulty in these individuals, an atonic form of the condition was suspected in most. This is further indicated by the fact that abdominal discomfort characteristic of an hypertonic

or spastic type was not a presenting complaint.[11]

We were impressed with the manner in which Mucilose-Super powder produced its clinical effect with a minimum of untoward complaints, in overcoming the main problem of true constipation, namely, the hard and dry nature of the fecal material.

The preparation was able to improve the consistency of the stool gently and within a practical period after treatment was begun. A preparation which allows such a time lapse will in most instances avoid any interference with the usual daily routine of the patient. The occurrence of a loose stool in two individuals would, no doubt, have been avoided if the daily dose had been reduced before the end of the five-day test period. It is significant that this compound causes no drastic or irritating effect upon the bowel, which suggests it as being suitable as a gentle bulking and softening agent for a variety of individuals, such as:

1. The chronically ill
2. The elderly
3. The postoperative (intestinal stoma, etc.)
4. The pregnant
5. Those on diets which offer suboptimal fecal residue or bulk.

Although a greater incidence of complaints were reported with Mucilose-Super flakes, bowel evacuation was highly satisfactory in 96 per cent of the group. It should be remembered that since this preparation contained no dextrose, double the amount of Mucilose per dose was received while the amount of Superinone was the same as in the group who were given the powder. Had the dosage schedule been adjusted we would, no doubt, have been able to avoid for the most part the gastrointestinal discomfort experienced by a number of those given the flakes. This appears to be true since another study by A. Cohen[12] wherein 35 adult patients were treated with a smaller dose. There were no untoward effects. Such variations indicate once more that in the management of constipation with any preparation, individual consideration must be given to each patient to obtain the most nearly physiologic response.

The mechanism of action of these Mucilose-Super preparations offer other advantages than providing a physiologic-like bowel evacuation. Since they are not hypertonic salts, they do not draw upon systemic fluids in a manner which might cause dehydration. Nor will the preparations produce an electrolyte imbalance. The fact that the action is not immediate nor drastic prevents any interference with digestion of vitamin absorption and finally, it is of particular importance to note that since this type of preparation tends to bring into play normal bowel function, the need for continuous therapy is avoided.

Insofar as dosage of the preparations is concerned, we were able to determine that for the powder a dose of one or two teaspoonsful twice daily given with water (followed by a second glassful) is well tolerated, and that after three to four days a gradual reduction of dosage is advisable. A similar schedule for the flakes except to be given once daily, seems preferable from our study. For maintenance, either of the preparations may be given on alternate days or used as needed to facilitate regularity.

Summary

1. Twenty-four severely constipated adult individuals were treated with a new bulk producing and stool softening agent (Mucilose-Super powder) for a test period of five days. A group of 77 patients were similarly treated with Mucilose-Super flakes. The two compounds are comparable except that the former has half of the mucilose replaced with dextrose.

2. The preparation, Mucilose-Super powder, produced a gentle, natural-like evacuation in all except two patients. After a few days therapy the exceptions developed a watery-type stool, which could have been avoided if the dosage schedule had been modified according to individual response. The flakes produced a 96 per cent good response of bowel evacuation but caused a higher incidence of temporary minor gastrointestinal

complaints. It is believed here also that had the dosage schedule been altered these complaints could have been markedly reduced.

3. One or two rounded teaspoonsful of the powder given twice daily after meals with two glasses of water is a satisfactory initial dose. As regularity and proper stool consistency is obtained, the dose may be reduced or used only as needed. A single daily dose for Mucilose-Super flakes seems preferable. Response to both Mucilose-Super preparations occurred in about six to eight hours in most of the patients studied.

4. Various conditions in which constipation may be present are mentioned and the suitability of this new form of laxative preparation for these disorders is discussed.

BIBLIOGRAPHY

1. Tainter, M. L. and Buchanan, O. H.: Quantitive comparisons of colloidal laxatives, Ann. N. Y. Acad. Sc. 58: 438, July 15, 1954.

2. Ivy, A. C. and Isaacs, B. L.: Karaya gum as a mechanical laxative; an experimental study on animals and man, Am. J. Digest. Dis. 5: 315, July, 1938.

3. Fluckiger, F. A. and Hanbury, F. R.: Tragacantha, Pharmacographia, London, MacMillan and Co., 1874.

4. Stein, D. and Gelehrter, J.: Effects of hydrogels on the configuration and functions of the colon; preliminary study, Rev. Gastroenterol. 7: 39, Jan.-Feb., 1940.

5. Block, L. H.: The management of constipation with a refined psyllium combined with dextrose, Am. J. Digest. Dis. 14: 64, Feb., 1947.

6. Cass, L. J. and Wolf, L. P.: A clinical evaluation of certain bulk and irritant laxatives, Gastroenterol. 20: 149, Jan., 1952.

7. Drill, V. A.: Pharmacology in Medicine, New York, McGraw-Hill Book Company, Inc., 1954, p. 44/10.

8. Goodman, L. S. and Gilman, Alfred: The Pharmacological Basis of Therapeutics, ed. 2, New York, The Macmillan Co., 1955, p. 1059.

9. Data in the files of the Department of Medical Research, Winthrop Laboratories.

10. Heatley, N. G., Gowans, J. L., Florey, H. W. and Sanders, A. G.: Effect on experimental tuberculosis and other infections of micrococcin-triton solution, Brit. J. Exper. Path. 33: 105, Apr., 1952.

11. Cecil, R. L. and Loeb, R. F.: A Textbook of Medicine, ed. 9, Philadelphia, W. R. Saunders, 1955, p. 881.

12. Cohen, A. R.: Personal Communication.

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ACCOMPLICE, N. One associated with another in a crime, having guilty knowledge and complicity, as an attorney who defends a criminal, knowing him guilty. This view of the attorney's position in the matter has not hitherto commanded the assent of attorneys, no one having offered them a fee for assenting.

ADMINISTRATION, n. An ingenious abstraction in politics, designed to receive the kicks and cuffs due to the premier or president. A man of straw, proof against bad-egging and dead-catting.

From the Devil's Dictionary by Ambrose Bierce
—Sagamore Press, Inc.

MEDICAL CENTER

Possible Mechanisms of Actions of Digitalis in Cardiac Muscle

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Generalized Effects

The beneficial effect of cardiac glycosides upon the failing heart has been clinically recognized for many years. Extensive investigation of chemical and biological properties of these compounds has revealed very little information about their mode of action. The general statement: "The main pharmacodynamic property of digitalis is its unique ability to increase the force of myocardial contraction,"[1] is the text book summary of the findings elaborated from this research.

Cardiac glycosides are unique among drugs for cardiotonic properties but their physiological properties are not restricted to the cardiac muscle. "In vivo" kidney perfusion studies have revealed that digitalis has a direct effect upon the kidney to produce diuresis.[2] Previously, diuresis that occurred with digitalis administration in congestive heart failure was thought to be a result of the improved hemodynamics.

A positive inotropic effect, increasing force of contraction, has been demonstrated on normal ventricle strip preparations in bicarbonate buffer with concentrations of ouabain as low as 0.1 mcg/ml of buffer solution.[3] The mechanism by which this inotropic effect is produced has been the subject of much argument based upon generous quantities of contradictory experimental evidence.

Influence on Action Potentials

The influence of cardiac glycosides on electrical activity of normal cardiac tissue has been adequately discussed elsewhere.[4] Interestingly, therapeutic doses of digitalis do not have a demonstrable effect on the resting potential of cardiac fibers.[5] However, action potential changes have been reported in slightly greater concentrations. The action potential of the sino-auricular node tissue is not changed but the action potential of non-sino-auricular node atrial tissue has been found to be prolonged.[6] Conversely, the action potential of normal ventricular tissue is shortened by digitalis action.[7, 8] An increased rate of repolarization has been demonstrated in Purkinje fibers.[9] Data for other tissue components of heart is not available.

Chemical Changes Following Digitalization

Chemical changes in normal cardiac tissue after digitalization are more variable than effects on electrical activity.

Boyer and Poindexter[10] reported an increase in potassium ions in heart muscle after digitalization. Rebar[11] also found that small doses of digitoxin would increase the potassium content, but non-toxic doses administered as often as four times daily induced a decrease. They postulated that these results may be due to a differential inhibition of potassium entry across the cell membrane. Holland and Dunn[12] reported that digitoxin profoundly effects the membrane permeability of intact cells to sodium and potassium but did not alter membrane permeability of mitochondria. However, other studies[13, 14] failed to detect any changes in potassium content following digitalis. Garb[15] reported that in isolated cardiac muscle fibers changes in potassium concentrations of 3.5 and 8.5 millimols/liter did not reduce the inotropic action of ouabain. However, the onset of toxic arrhythmias could be delayed or prevented by increasing the potassium concentration.

Effects on Cardiac Tissue Metabolism

Cardiac glycoside data of effects on phosphate, lactate and glycogen metabolism are somewhat conflicting. The basic approach used for studying these systems has been to determine the effects of cardiac glycosides on enzymes thought to be involved in their metabolic pathways.

Oxidative phosphorylation of isolated cardiac mitochondria from digitalized and normal animals has been studied.[16] No difference in efficiency of oxidative phosphorylation could be observed between treated and untreated animals. It was concluded that digitoxin does not affect energy-generating mechanisms of normal heart mitochondria. Wollenberger[17] also demonstrated that when an animal has been given sufficient cardiac glycoside to cause arrhythmias there is no measurable change in high energy phosphate content which would be attributed to a direct metabolic effect of the drug.

Oxygen consumption rate of a tissue is reported to be a function of the concentration of inorganic phospate and phosphate acceptors.[18] Therefore, a decrease in concentration of labile phosphates, implying a rise in the concentration of inorganic phosphate and phosphate acceptors would be expected to stimulate oxygen consumption. Wollenberger[19] found that the concentration of labile phosphate was lowered in myocardium in response to a large increase in arterial resistance and pressure. However, this was not due to increased work because increased cardiac output (systolic output increased—rate remains constant) without a major rise in arterial pressure does not cause a depletion of labile phosphates. A possible explanation comes from a study reporting that breakdown of phosphocreatine is greater in isometric than isotonic contraction.[2] Therefore, expenditure of phosphate bound energy would be chiefly in overcoming resistance against contraction.

Non-toxic doses of cardiac glycosides lower phosphocreatine and raise lactate levels significantly in dog ventricle muscle. Glycogen is usually decreased whereas adenosine polyphosphate and inorganic phosphates show no significant change.[11] An increased rate of turnover of high energy phosphate and glycogen by non-toxic doses of cardiac glycosides has been suggested from these results.

Ventricular strain can be experimentally induced by the surgical production of supravalvular stenosis.[21] Although anatomical changes occur within the myocardium, it is not surprising that there are no accompanying metabolic changes which will respond to digitalization.[22] Ferrer[23] found that in the absence of myocardial damage, i.e., metabolic alteration within the myocardium, patients suffering from mitral stenosis with a mechanical block only were not benefited by digitalization.

Every practicing physician is familiar with the dramatic effects of digitalization of patients suffering with congestive heart failure. It becomes apparent from experimental evidence that the effects of cardiac glycosides on normal cardiac muscle or pure heart failure induced by mechanical block are in no way analogous to the drugs' mode of action in heart failure with accompanying metabolic changes of myocardial damage.

Effects on Skeletal Muscle

Some effects of the glycosides on normal cardiac muscle have been demonstrated in skeletal muscle as well.

A positive inotropic action of ouabain in a concentration of 0.5 mcg/ml was reported by Faust[3] on diaphragm muscle strips in bicarbonate buffer medium. Higher concentrations rapidly depressed the force of contraction. Edman[24] could not demonstrate an inotropic effect with ouabain, 10^{-6}M, on ATP-induced contractions of glycerinated muscle fibers. When calcium, 10^{-3}M, was added to the preparation, an inotropic effect was noted but calcium alone had no effect. Lanatoside C substituted for ouabain at the same concentration would approximate the same degree of inotropic effect.

Skeletal muscle paralysis has been seen to occur in the neck and hind legs of guinea pigs when toxic and sub-toxic levels of cardiac glycosides were reached as determined by development of arrhythmias.[3] Skeletal muscle paralysis has also been reported in the neck and legs of rats.[25] Respiratory paralysis frequently occurred prior to cardiac arrest in rats[26] and guinea pigs[27-30] when toxic doses of cardiac glycosides were administered. Decreased work ability of dogs on a treadmill following digitalis administration was seen by LaDue.[31] He also reported that a patient demonstrated marked skeletal muscular weakness after digitalis intoxication.

The inotropic effect of cardiac glycosides has been reported in normal cardiac and skeletal muscle. No significant effects of these drugs on metabolic pathways in normal muscle have been found. The glycosides failed to ameliorate pure heart failure produced by mechanically increasing the work load on the heart without simultaneous myocardial damage. However, cardiac glycosides are dramatically effective in heart failure resulting from damaged myocardium.

Tissue Affinity

Cardiac tissue affinity for cardiac glycosides does not exist. Three times as much digitalis will accumulate in liver than heart and ten times greater concentration of the drugs' metabolites.[32] The possibility should not be overlooked that the metabolites, rather than the native drug, may be responsible for the demonstrable effects upon cardiac tissue.

Concepts of Energy Metabolism in Muscle

Working muscle must have a specific energy source readily available. The current concept of the specific energy source is the high energy phosphate bonds of Adenosine Triphosphate (ATP) which transmits energy to actomyosin instigating muscular contraction. The reservoir of high energy phosphate for ATP is thought to be phosphocreatine. When one molecule of ATP reacts normal muscular contraction, 11,000-12,000 calories of energy are utilized by this reaction.

Skeletal muscle contains a ten-fold greater store of phosphocreatine and available ATP than cardiac muscle. It also possesses anaerobic enzyme systems which allow the muscle to do work for short periods of time under conditions of oxygen debt. The heart, on the other hand, has small stores of ATP and phosphocreatine but is very rich in oxidative enzymes. A large and constant oxy-

gen supply for the oxidative metabolism of the heart is readily available due to its great vascularity. In the absence of anaerobic enzymes the heart suffers embarrassment under conditions of a very small degree of oxygen debt. The anatomical and metabolic architecture favors a rapid and complete conversion of energy precursors into available energy (ATP and phosphocreatine) and the sustained transformation of this potential energy into muscle contraction.

Experiments utilizing heart-lung preparations have shown that digitalis increases the force of contraction without increasing oxygen uptake.[33] These results infer that an increase in the efficiency of transforming potential energy into muscle contraction has occurred.

Grisolia[33] extended the possible explanation for these results. The ability of cells to transform potential energy into useful work or into the production of heat according to physiological demands must require a regulatory mechanism. Heat production, (ATP-ase activity), markedly increases when mitochondria are incubated briefly in the absence of substrate. If normal tissue preparations are made to do constructive chemical work, oxygen consumption will increase by increasing the loss of potential energy from ATP-ase or ATP-ase-like action with heat production. The tissue in the heart-lung preparation may act as damaged cells with a depletion of necessary substrates and co-enzymes. This would simply tend to shift cellular activity into the production of heat instead of useful work. Cardiac glycosides may not work directly on actomosin but their beneficial effects are realized by expediting effective utilization of high energy phosphate from a shift of the "regulatory mechanism." Digitalis, however, does not influence the ATP-ase activity of rat liver mitochondria.

Concentrations of digitalis were found highest in fractions of the cell representing the "nucleus," "cell membrane" and "mitochondria."[34] The remaining supernate, presumed to represent the myosin fraction, contain only 0.2% of digitalis. Employing the calculated molecular weight for heart myosin 100,000,[35] that percent of digitalis fixed in interaction with myosin would entail a molecular relationship of $1:10^{-8}$ if a single site of action is assumed.[32] Dilutions of this magnitude would make a direct digitalis-myosin relationship somewhat unlikely and a possible site of action at energy production or transfer level more feasible.

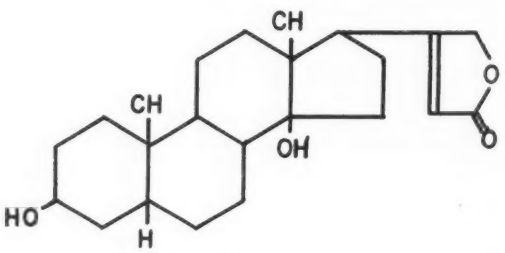
Energy production in normal and damaged mitochondria was studied by Grisolia[36] by measuring oxygen uptake and phosphate esterfication. He found that digitalis and quinidine at high concentrations did not effect the energy production of normal mitochondria but they did potentiate the uncoupling effect of dinitrophenol (DNP). The potentiation of DNP uncoupling of oxidative phosphorylation may act by altering membrane permeability. Changes in ionic composition of the medium markedly affect this potentiation. The intact cell, but not mitochondria, displays marked changes of permeability to sodium and potassium under the influence of cardiac glycosides. Dinitrophenol, however, affects the permeability to these ions in both the intact cell and mitochondria.[12]

There has been some disagreement as to whether ATP is utilized or necessary during a single muscle twitch.[37] It has been demonstrated[38] in "in vitro" model system studies that other nucleotides, i.e., uridine triphosphate, will, on equal molar bases, induce the same degree of contraction and relaxation as ATP. These observations led Grisolia and Ito[33] to postulate that if a compound X is primarily connected with the contraction of muscle, it might also be connected to the utilization of ATP if, as in a hypothetical case, ATP were deaminated. Proctor[39] has shown that digitalis will inhibit ATP deamination in preincubated and thus damaged heart homogenates. After the interaction of ATP with actomyosin the resulting intermediate tri-phosphate has to be reaminated at the expense of the energy of ATP;[40] (as in the reaction inosinic acid + aspartic acid → adenylic acid). This hypothesis seems feasible since Kalckar[41] has shown that the 6-amino group of adenine in the nucleotide form is very rapidly equilibrated with isotopic ammonia.

Structural and Metabolic Relationship to Other Steroids

Mechanisms involving the metabolism of other types of steroid compounds, because of their structural similarities, may suggest possible mechanisms for the action of cardiac glycosides.

Structurally the cardiac glycosides have several things in common, present in the pharmacologically active cardiac aglycones. They are: (1) a B-OH on carbon 3, (2) stereochemical configuration at carbon 3, (3), a OH group at carbon 14 and (4) an angular methyl group at carbon 10. Common to all of these compounds is a lactone ring at carbon 17 whose presence is usually considered necessary for pharmacological activity. Digitoxigenin, whose structural formulae is shown in Figure I, is a typical example of this group of compounds.



DIGITOXIGENIN

FIGURE 1

Grinnell[42] found that priming dogs with estrogenic steroids would significantly delay the onset of arrhythmias induced by a toxic dose of digitalis. Competitive protective mechanisms might be involved since the steroids are structurally related to digitalis by a B-OH groups on the carbon 3 position. The site of action might possibly be centered around carbon 3 position whereas the mode of action involves the carbon 17 position.

Recently, Talalay and Williams-Asham[43] demonstrated that estrogenic steroid hormones would activate a transhydrogenase enzyme system in crude extracts of human placenta which transfers hydrogen from TPNH to DPN according to the following reaction (Figure 2).

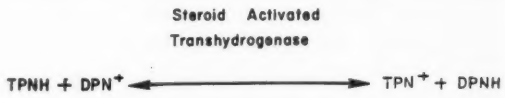


FIGURE 2

Experimental studies of action of steroid hormones upon accessory sexual tissues[44] have shown that extra-mitochondrial synthesis specifically requiring TPNH are extremely sensitive to these steroids. Estradiol-17B stimulated the conversion of acetate to fatty acids and cholesterol but did not influence oxidation of acetate.

Attempts to repeat the work of protecting the heart with steroid hormones from digitalis intoxication revealed that protection was afforded by these compounds only when the animals were on a high fat diet.[45] It is possible that the low fat diet stimulated fatty acid and cholesterol synthesis from acetate via the extra-mitochondrial TPNH specific enzymes. The steroid hormones may be utilized in these reactions and would not be available to the mitochondrial enzyme systems. If high fat diets are fed, the extra-mitochondrial fatty acid synthesis mechanisms would be suppressed. The estrogenic steroid hormones would then be available to competitively bind or inhibit mitochondrial mechanisms susceptible to digitalis stimulation.

Higher concentrations of TPNH is present in muscle than TPN and at a steady-state level DPN is usually greater than DPNH.[46] Therefore, the ratio

$$\frac{(\text{TPNH})\quad(\text{DPN})}{(\text{TPN})\quad(\text{DPNH})}$$

is always high and represents the equilibrium constant of the pyridine nucleotide transhydrogenase reaction.[43] Disturbances in the balance of TPNH and DPNH maintained by a transhydrogenase system, would alter the equilibrium between anabolic and catabolic mechanisms that govern the growth and function of the cells. The majority of the DPN or TPN linked dehydrogenases employ

only one hydrogen acceptor perferentially and function less satisfactorily with another.

Possible Enzymatic Mechanisms of Muscle Metabolism

It has been suggested by Kaplan[47] that the transhydrogenase systems of the mitochondria are important in regulating the balance between various synthesis and energy-yielding reactions. His experiments suggest that oxidation of DPNH by mitochondria serves as a source of energy for synthesis for ATP and that oxidation of TPNH, by transferring the hydrogen to DPN, must first occur before TPN is available to be coupled with phosphorylation.

These recent findings suggest another possible mechanism for the mode and site of action of cardiac glycosides on cardiac muscle. It would not seem unreasonable to assume that a pyridine nucleotide transhydrogenase system is present in cardiac muscle. Attempts will be made to explain how the presence of this enzyme system in heart muscle could account for the confusing and negative experimental results obtained when this system is influenced by digitalis.

At this point it seems necessary to briefly review metabolic pathways in cardiac muscle and, in particular, specific pyridine nucleotide-linked enzymes involved in these pathways.

The principal source of energy for skeletal muscle contraction is from degradation of glucose with production of ATP. Cardiac muscle, however, is unique in this respect and metabolizes lactate preferentially to glucose as its principal source of energy. The key reaction in this metabolic pathway, as seen in Figure 3, is catalyzed by DPN-linked lactic acid dehydrogenase.

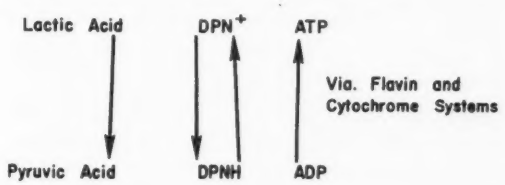


FIGURE 3

It is seen in this reaction that ATP is produced for muscular contraction by reduction of DPN without utilization of oxygen. Since the vast majority of enzymatic reactions are reversible, the critical ratio between DPN and DPNH must be maintained for the reaction to proceed in proper direction.

Other important reactions involving pyridine nucleotide linked enzymes are found within the tricarboxylic acid cycle. An enzyme linked with DPN or TPN catalysis the reaction malic acid to oxalacetic acid with the production of high energy phosphate. Ochoa[48] found that this enzyme apparently served two roles. One role is specifically linked to TPN. The second function attributed to the enzyme is the conversion of malic acid directly to pyruvic acid by oxidative decarboxylation in an acid medium. The dominant action of the enzyme at any given moment is dependent upon the hydrogen ion concentration of the medium. Figure 4 illustrates this dualistic role.

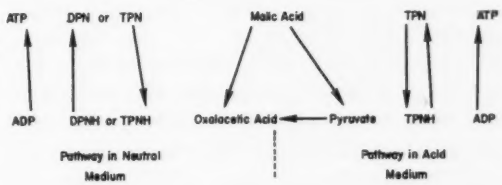


FIGURE 4

It will be noted that both pathways are productive of high energy phosphate although the oxidative decarboxylation of malic acid to pyruvate occurs only when the hydrogen ion concentration is abnormally elevated. The mechanism by which this abnormal pathway is influenced by digitalis will be discussed later.

Iso-citric dehydrogenase, another enzyme in the tricarboxylic acid cycle, catalysis the reaction isocitrate to oxalosuccinic acid with production of high energy phosphate. This enzyme, illustrated in Figure 5, is specifically linked with TPN.

It must be re-emphasized that the balance

of the ratio between oxidized TPN or DPN and the reduced forms (TPNH or DPNH) must be properly maintained if metabolic

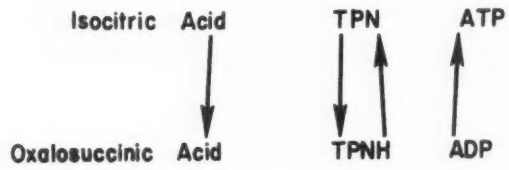


FIGURE 5

cycles are to function at proper rate and direction. Changes in this ratio might increase the rate of reaction, inhibit the reaction or entirely reverse its direction. Existing evidence of biological reactions suggest that this balance is most likely to be under enzymatic control. The pyridine nucleotide transhydrogenase system, as previously described, would be the best candidate for this important regulation.

Possible Influence on Enzymatic Activity

Briefly the TPNH + $DPH^+ \leftrightarrows TPN^+$ + DPNH reaction is catalyzed by a pyridine nucleotide transhydrogenase enzyme and this enzymatic reaction has been shown to be greatly influenced by the presence of certain steroid hormones.[43] The action exhibited by cardiac glycosides, with exception of the reaction lactate to pyruvate, on the failing heart might function through stimulation of this enzymatic mechanism. However, it cannot be seen at this time how this mechanism would enhance the conversion of lactate to pyruvate. This can be attributed to inadequate knowledge about the concentrations ratios of oxidized and reduced forms of pyridine nucleotide-linked enzymes for optimal reaction. The significance of their distribution throughout the cellular architecture is also controversial.

Due to the uniqueness of cardiac metabolism, we could assume that in normal heart the rate of pyridine nucleotide transhydrogenase system reaction is optimal under conditions prescribed by normal environment. This would be one explanation why digitalis has no beneficial effect on the normal heart, why in mitochondria it does not stimulate oxygen consumption, does not alter oxidative phosphorylation, high energy phosphate production, ATP-ase activity or change the inorganic phosphate concentrations. On the other hand, lactate accumulates in cardiac tissue after the administration of non-toxic doses of digitalis. Again the lack of information about lactate metabolic mechanisms compels us to postulate a reason for this effect. The extra-mitochondrial synthesis mechanisms are regulated by the same pyridine nucleotide transhydrogenase system. They may be affected by imbalances before the mitochondrial systems because of their accessibility, location, differences in the medium or other unknown reasons. The mechanisms by which lactate is converted to pyruvate or transported to the mitochondria might be susceptible to stimulation by digitalis if these extra-mitochondrial mechanisms are functioning at a lowered equilibrium constant for the pyridine nucleotide transhydrogenase reaction. Thus digitalis would tend to decrease or reverse the reaction of lactate to pyruvate. For this reason and also because certain structures of the heart are more susceptible to digitalis intoxication than others, digitalis intoxication would be evident before other metabolic pathways would be demonstrably altered. Digitalis intoxication of the heart would therefore be analogous to skeletal muscle fatigue caused by the accumulation of lactic acid and its metabolites at a cellular level.

Metabolic Changes in Myocardial Damage

There is little doubt that metabolic changes occur in myocardium with myocardial damage. These may be transitory such as in a myocardial infarct or progressive as seen in congestive heart failure. However small or extensive the damage, some beneficial effect is usually realized from the administration of cardiac glycosides.

The metabolic mechanisms involved and their interrelations may be comprehended by analyzing the alterations occurring in a localized area of myocardium as a consequence of sudden or rapidly progressing oxygen debt. When oxygen is limited to a tis-

sue, the components of oxidative-reducing enzymes tend to accumulate in their reduced forms. The first effect seen would be due to a shift in the DPNH/DPN ratio of the lactic acid to pyruvate reaction. Increased DPNH would cause a shift from pyruvate to lactic acid, thus reducing or depleting the substrate for energy production. Lactate would be expected to accumulate. This area of the heart suffering the embarrassment quickly becomes hyperexcitable and may trigger-off ectopic beats, arrhythmias or fibrillation depending upon the extent of damage and the rapidity of onset. Sudden massive myocardial infarcts usually result in fibrillation and death, whereas, a slower onset or less extensive damage may not induce such dramatic irregularities. The immediate area of embarrassment in time will become fibrosed and inactive. The area immediately around the fibrosis remains hyperirritable due to oxygen debt until new vascularity develops.

A secondary reaction, augmenting this diverse metabolism, would be initiated by a change in pH of the tissue resulting from the accumulation of CO_2 and other metabolites. When the pH decreases it activates the TPN-decarboxylase activity of the malic enzyme and shifts the normal reaction malic acid to oxalacetic acid to the normal pathway of malic acid to pyruvic acid. Increase in the pyruvic acid augments the reversed reaction to lactic acid adding further metabolic insult. Utilizing malic acid in this pathway would deplete substrates of the tricarboxylic acid cycle since pyruvate is no longer available.

The accumulation of the cofactors, i.e., DPN, TPN, FAD, etc., in their reduced forms would inhibit or reverse virtually all the reactions within the tricarboxylic acid cycle. The accumulation of DPNH and TPNH would also inhibit the pyridine nucleotide transhydrogenase system.

Postulated Effects on Metabolic Changes

If normal metabolic reactions are completly inhibited or reversed, as we have just described, then digitalis could not be of much benefit to this system. Digitalis in myocardial infarct undoubtedly exerts its effect upon the metabolically depressed hyperexcitable tissue around the infarcted area and not upon the irreversibly damaged area.

The myocardium of the failing heart of congestive heart failure would represent metabolically depressed, hyperexcitable tissue. The metabolic depression is diffuse throughout the myocardium and progressively slower in onset. However, metabolic alterations encountered are probably the same as those described for myocardial infarct.

Correction of this metabolic depression by digitalization might occur in the following manner. Since the extra-mitochondrial synthesis of fatty acids, cholesterol, etc., would be of secondary importance to the mitochondrial oxidative phosphorylation mechanism, it would seem reasonable that digitalis acts first upon the system necessary for immediate survival of the cell. Therefore, the influence of digitalis would probably be seen as an apparent increase in TPN-isocitric dehydrogenase activity. This effective increase in activity would be brought about through stimulating the pyridine nucleotide transhydrogenase system. The system would transfer hydrogen from TPNH to DPN, thereby increasing the TPN available for enzyme activation. With re-establishment of the proper TPNH/TPN and DPN/DPNH ratios the rate and direction of the metabolic processes would return toward normal. The return of function to the heart in its role as a pump would, of course, depend upon the amount of irreversible damage present at the time of digitalization.

Possible mechanisms for the action of cardiac glycosides have been reviewed. The inadequacy of these postulates to explain the results obtained under experimental conditions leaves much to be desired. The possible mechanism, for the action of cardiac glycosides on cardiac muscle, postulated in this paper is an endeavor toward these ends. However, the obvious absence of experimental data at this time gives impetus to these words of Thomas Huxley, "The tragedy of science is the shattering bereavement of seeing a beautiful hypothesis slain by an ugly fact."

BIBLIOGRAPHY

1. Goodman, L. S. and A. Gilman, The Pharmacological Basis of Therapeutics. Second edition, The MacMillan Company, New York, 1955, page 672.

2. Hyman, A. L., Jacques, W. E. and E. J. Hyman, Observations of the Direct Effect of Digoxin on Renal Excretion of Sodium and Water. Am. Heart J. 52: 592, 1956.

3. Faust, R. M. and P. R. Saunders, Comparative Effects of Quabain upon Contractile Force of Guinea Pig Diaphragm and Heart. Proc. Soc. Exp. Biol. and Med. 94: 351, 1957.

4. Cranefield, P. F. and B. F. Hoffman, Electrophysiology of Single Cardiac Cells. Physiological Reviews 38: 41, 1958.

5. Hoffman, B. F., Ann. Brazil Acad. Sci. (In press) Reference: Cranefield, P. F. and B. F. Huffman, Electrophysiology of Single Cardiac Cells. Physiological Reviews 38: 41, 1958.

6. Levy, J. U. and T. C. West, J. Pharmacol. and Exper. Therap. (In press) Reference: Cranefield, P. F. and B. F. Hoffman, Electrophysiology of Single Cardiac Cells. Physiological Reviews 38: 41, 1958.

7. Stutz, H., Feigelson, E., Emerson, J. and R. J. Bing, The Effects of Digitalis (Cedilanid) on the Mechanical and Electrical Activity of Extracted and Non-extracted Heart Muscle Preparations. Circulation Research 2: 555, 1954.

8. Woodbury, L. A. and H. H. Hecht, Effects of Cardiac Glycosides Upon the Electrical Activity of Single Ventricular Fibers of the Frog Heart and Their Relation to the Digitalis Effect of the Electrocardiogram. Circulation 6: 172, 1952.

9. Coraboeuf, E., DeLoze, C. and J. Boistel, Action de la Digitale sur les Potentiels de Membrane et d'Action du Tissu Conducteur Ju Couer de Chien 'etude'e a l'aide de Microelectrodes Intracullulaires. Compt. Rend. Soc. Biol. 147: 1169, 1953.

10. Boyer, P. K. and C. A. Poindexter, The Influence of Digitalis on the Electrolyte and Water Content of Heart Muscle. Am. Heart J. 20: 586, 1940.

11. Rebar, J., Jr., Rebar, B. T. and A. Omachi, Influence of Digitoxin on Labile and Inorganic Phosphates, Lactate, Glycogen, Potassium and Sodium in Dog Ventricle. Circulation Research 5: 504, 1957.

12. Holland, W. C. and C. E. Dunn, Role of the Cell Membrane and Mitochondria in the Phenomenon of Ion Transport in Cardiac Muscle. Am. J. Physio. 179: 486, 1954.

13. Calhoun, R. A. and T. R. Harrison, Studies in Congestive Heart Failure. IX The Effect of Digitalis on the Potassium Content of the Cardiac Muscle of Dogs. J. Clin. Invest. 10: 139, 1931.

14. Cohn, H. L. Jr., Effects of Digitalis and Hypoxia on Potassium Transfer and Distribution in the Dog Heart. Am. J. Physiol. 184: 548, 1956.

15. Garb, S. and V. Venturi, The Differential Actions of Potassium on the Therapeutic and Toxic Effects of Quabain. J. Pharmacol. and Exper. Therap. 112: 94, 1954.

16. Plaut, K. A., Gertler, M. M. and G. W. E. Plaut, Efficiency of Oxidative Phosphorylation of Heart Muscle Mitochondria from Digitalized Guinea Pigs. Circulation Research 5: 226, 1957.

17. Wollenberger, A., Metabolic Action of Cardiac Glycosides. II. Effect of Quabain and Digoxin on the Energy-Rich Phosphate Content of the Heart. J. Pharmacol. and Exper. Therap. 103: 123, 1951.

18. Lardy, H. A., Energetic Coupling and the Regulation of Metabolic Rates. Proc. Third International Congress of Biochem., Brussels, 1955 (c. Lie'becg, ed.) New York, Academic Press, p. 287, 1956.

19. Wollenberger, A., Relation Between Work and Labile Phosphate Content in the Isolated Dog Heart. Circulation Research 5: 175, 1957.

20. Nachmansohn, D., Uber Den Zerfall. Der Kreatinphosphorsaure im Zusammenhang mit der tatigkeit des Muskels. II. Biochem. Ztschr. 208: 237, 1929.

21. Jaques, W. E. and A. L. Hyman, Experimental Supravalvular Mitral Stenosis in the Dog. A.M.A. Arch. Path. 64: 67, 1957.

22. .. .... , The Effects of Digoxin on Cardiac Output and Hemodynamics in Experimental Supravalvular Mitral Stenosis. J. Okla. State Med. Assoc. 51: 111, 1958.

23. Ferrer, M. I., Harvey, R. M., Cathcart, R. T., Cournand, A. and W. R. Dickinson, Jr., Hemodynamic Studies in Rheumatic Heart Disease. C. Rc. 6: 688, 1952.

24. Edman, K. A. Paul, Action of Cardiac Glycosides on the ATP-Induced Contraction of Glycerinated Muscle Fibers. Acta Phsuiologica Scand. 30: 69, 1953.

25. Greeff, K. and E. Westermann, Untersuchungen uber die Muskell a hmende Wirkung des Strophanthins. Arch. Exp. Path. u. Pharmakol. 226: 103, 1955.

26. Hoffmann, G. and H. Wienke, Sur Frage der verschiedenen Emprindlichkeit des Ratten und Meerschweinchenherzens gegen Digitalis und andere Kontrakturgifte (Ba. Ca). ibid. 217: 225, 1953.

27. ....., and L. Lendle, Kritisches Zur Digitalisauswertung Am. Meerschweinchen. ibid. 212, 376, 1951.

28. Miya, T. S. and H. G. O. Holck, Effect of the Rate of Injection of Digitalis upon its Lethal Dose in Guinea Pigs. J. Am. Pharm. Assoc. (Scient. ed.) 38: 64, 1949.

29. Jacobsen, E. and V. Larsen, Experiences with the Bioassay of Digitalis on Guinea Pigs. Acta. Pharmacol. and Toxicol. 7: 35, 1951.

30. Goldberg, L., Cardiac Irregularity and Respiratory Arrest in Assay of Cardiac Glucosides by the Guinea-Pig Method. Arch. Internat. Pharmacodyn. 78: 1, 1949.

31. LaDue, J. S., Generalized Muscular Weakness as a Toxic Reaction to Digitalis. Proc. Soc. Exp. Biol. and Med. 48: 5, 1941.

32. Okita, G. T., Talso, P. J., Curry, J. H., Jr., Smith, F. D., Jr. and E. M. K. Geiking, J. Pharmacol. and Exper. Therap. 115: 371, 1955.

33. Grisolia, S. and N. Ito, Digitalis (Dimond, G. ed.) First edition, Charles C. Thomas Company, Springfield, Illinois, 1957, pages 86-94.

34. Harvey, S. C. and G. R. Pieper, Intracellular Distribution of Digitoxin. Federation Proc. 12: 329, 1953.

35. Ellenbogen, E. and R. E. Olson, The Contractile Proteins of Dog Heart. ibid. 14: 207, 1955.

36. Grisolia, S., The Potentiating Effect of Digitoxin and Quinidine on Dinitrophenol Uncoupling of Oxidative Phosphorylation. Biochem. and Bioph., ACTA. 18: 437, 1955.

37. Mommaerts, W. F., Is Adenosine Triphosphate Broken Down During a Single Muscle Twitch? Nature 174: 1083, 1954.

38. Ranney, R. E., Biochemical Characteristics of Glycerol-extracted Myocardial Fibers. Am. J. Physiol. 183: 197, 1955.

39. Proctor, C. D., Rebar, J., Jr. and B. Tigerman. A Hypothesis for a Mechanism of Cardiac Glycoside Action. Ann. New York Acad. Sci. 62: 379, 1955.

40. Abrams, R. and M. Bentley, Transformation of Inosinic Acid to Adenylic and Guanylic Acids in a Soluble Enzyme System. J. Am. Chem. Soc. 77: 4179, 1955.

41. Kalckar, W. M. and D. Rittenberg, Rejuvenation of Muscle Adenylic Acid Nitrogen in Vivo Studied with Isotopic Nitrogen. J. Biol. Chem. 170: 455, 1947.

42. Grinnell, E. H. and P. W. Smith, Effect of Estrogens on Myocardial Sensitivity to Toxic Effects of Digoxin. Proc. Soc. Exper. Biol. and Med. 94: 524, 1957.

43. Talalay, P. and H. G. Williams-Ashman, Activation of Hydrogen Tranfer Between Pyridine Nucleotides by Stenoid Hormones. Proc. Nat. Acad. of Sci. 44: 15, 1958.

44. Mueller, G. C., A Discussion of the Mechanism of Action of Steroid Hormones. Cancer Research 17: 490, 1957

45. Smith, P. W., Personal Communication.

46. Glock, G. and P. McLean, Levels of Oxidized and Reduced Diphosphopyridine Nucleotide and Triphosphopyridine Nucleotide in Animal Tissues. Biochem. J. 61: 388, 1955.

47. Kaplan, N. O., Schwartz, M. N., Frech, M. E. and M. M. Ciotti, Phosphorylative and Non-phosphyoylative Pathways of Electron Transfer in Rat Liver Mitochondria. Proc. Nat. Acad. of Sci. 42: 481, 1956.

48. Ochoa, S., Enzymatic Mechanisms in the Citric Acid Cycle. Advances in Enzymol. 15: 183, 1954.

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MEDICAL-SURGICAL CONFERENCE

RENE MENGUY, M.D., Ph.D., and MRS. ESTHER COMPTON

Proceedings of a weekly conference sponsored by the Medical and Surgical Services, VA Hospital and the Departments of Medicine and Surgery, University of Oklahoma School of Medicine.

PANCREATIC PSEUDOCYST

Doctor McCune: The patient is a 51-year-old white male who was first seen in this hospital in February, 1958. At that time he was admitted to the Medical Service with a several day history of acute onset of epigastric pain and vomiting. At times his pain seemed to radiate over the entire abdomen. The pain was cramping in nature. On the morning of admission he had consumed a pint of whiskey before breakfast. He also gave a history of excessive alcohol intake over the past 10 to 15 years. Prior to entering the hospital he had had two or three coffee ground emeses. On the Medical Service the thought was that he had acute gastritis, secondary to alcohol, and also acute pancreatitis. His serum amylase which was 320 units on admission to the hospital decreased to about 120 at the time of discharge a week later. While in the hospital he was treated with gastric suction and fluid replacement. He recovered from this episode uneventfully and from the latter part of February until he presented himself to the hospital on the 31st day of July, 1958 he had only a few episodes of epigastric pain which were not severe enough to cause him to seek hospitalization. On July 31st he came to the hospital complaining of rather severe epigastric pain radiating over the entire abdomen which had been present for about 10 days. During those 10 days he had been vomiting intermittently and during the three days prior to admission he had not been able to eat anything at all. The only positive physical findings were some redness of the mucous membranes of the mouth and tongue, a generalized loss of skin turgor and abdominal tenderness primarily in the right upper quadrant and a liver palpable 4cm. below the right costal margin. The laboratory studies done at that time showed the following results: His serum amylase was 4,000 units and the alkaline phosphatase was 15 Bodansky units. The serum bilirubin was normal. He was treated on the Medical Service with suction and intravenous fluids. On August 6 a mass in the left upper quadrant and epigastrium was found. The mass was thought to be fluctuant and cystic. From the 6th to the 29th of August his course was one of intermittent pyloric obstruction. He was treated with intravenous fluids in an effort to maintain a proper state of nutrition. It was impossible to crossmatch this patient with the stored blood available in the hospital. On August 29 under fluorscopic control a needle was placed into the cyst and 3,000 cc of yellow golden fluid were aspirated. Radio opaque

media was introduced into the cyst and x-rays taken which confirmed the diagnosis of a pancreatic pseudocyst. Following aspiration of the cyst he was able to eat which he had not been able to do for several days. However, following aspiration the cyst promptly began to fill again. He became jaundiced and a serum bilirubin done on October 1 was 4 mgm%. On Friday, October 3 the abdomen was explored through an upper mid-line incision. The stomach was displaced anteriorly by a large retrogastric mass. The cystic mass was exposed by division of the gastrocolic ligament and a trochar was induced into the cyst, the contents of which were evacuated. This facilitated exposure considerably. The gall bladder was found to be markedly distended with evidence of minimal acute cholecystitis. Exploration of the common bile duct revealed considerable dilatation. A cholangiogram was then done. This showed complete obstruction and distortion of the distal third of the common bile duct. The gall bladder was then removed and the common bile duct opened. Exploration of the duct confirmed the diagnosis of complete obstruction. It was impossible to pass even the smallest dilator into the duodenum. Accordingly a biliary shunt procedure was performed by means of a side to side choledochoduodenostomy. Following this an internal decompression of the cyst was performed by anastomsing a loop of jejunum to a dependent portion of the cyst. The anastomosis was performed in a retrocolic fashion. Proximal to the cystojejunostomy an enteroanastomos was carried out in order to prevent penetration of small bowel contents into the cyst. Postoperatively he did extremely well. Whereas his plasma amylase had remained high until just before operation the level has now come down to about 400 units. His jaundice decreased very rapidly following operation. On the day of operation there was a large amount of bile in the aspirated gastric contents.

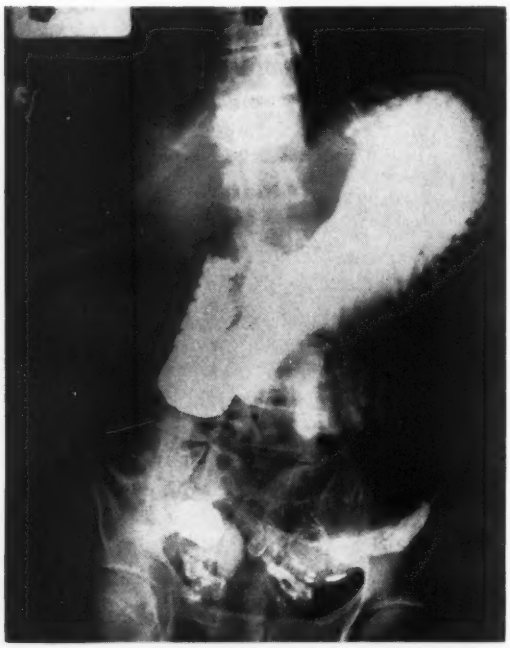

FIGURE 1

FIGURE 2

Doctor Ridings: All of the upper gastrointestinal tract x-rays show a very large mass which is displacing the stomach forward. A barium enema also shows the mass extrensic to the colon and displacing the transverse colon downward; therefore we can say that there is a mass posterior to the intestinal tract in the mid portion of the abdomen (Fig. 1). The diagnostic puncture of the cyst shows opaque media in the cyst

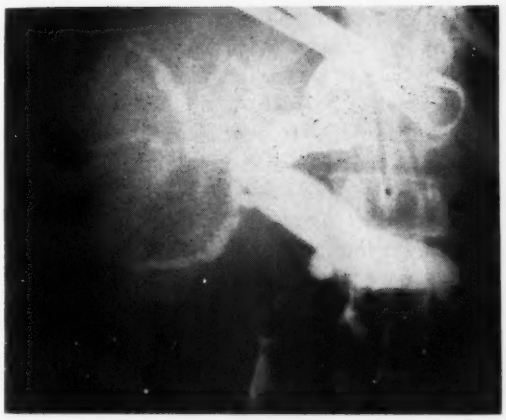

FIGURE 3

(Fig. 2). A cholangiogram done at the time of operation shows marked dilatation of the common bile duct with distortion and complete obstruction of the terminal portion of the duct. There is no media in the duodenum (Fig. 3). Doctor Hodges would you like to discuss this diagnostic aspiration of the cyst which you performed?

Doctor Hodges: We elected to aspirate the mass because we considered it to be a pancreatic cyst and, since we were unable to crossmatch this patient with stored blood and he was unable to eat, we were going backward all the time with him instead of getting him in any shape for operation. In view of the separation between the bowel and the stomach we thought it would be easy to introduce a needle directly into the cyst with the patient lying on his back. The cyst fluid had an amylase level of 40,000 units so that there was little doubt but that we were dealing with a pancreatic pseudocyst. The patient was able to eat immediately afterward although the cyst promptly refilled. We had placed a polyethelene tube through the needle and into the cyst in an attempt to keep it draining but the tube soon became plugged and no longer accomplished its function.

Doctor Menguy: I think this patient may form a good background for the discussion of pseudocysts of the pancreas in general. There are such things as retention cysts, neoplastic cysts and parasitic cysts. I think we must keep in mind that the majority of cysts of the pancreas encountered in clinical practice are the so-called pancreatic pseudocysts. One can define a pancreatic pseudocyst as a collection of fluid-like material containing necrotic debris and old blood that forms in the pancreas or adjacent to it. A pseudocyst has no true wall. It's walls are really formed by fibrous inflammatory tissue or by the walls of the surrounding organs such as the posterior wall of the stomach, colon, the transverse mesocolon, all of which are covered by necrotic granulation tissue. The pseudocyst develops in the lesser peritoneal cavity. Due to the fact that it has no true epithelial lining the lesion is called pseudocyst. In general pancreatic pseudocysts are due to two causes—acute pancreatitis or trauma. Trauma to the abdomen will cause a cyst to develop by laceration of the pancreas along with the pancreatic ducts. This allows egress of pancreatic secretions into the surrounding tissue spaces. On the other hand acute pancreatitis by a chemical necrosis of pancreatic tissue produces a break in the continuity of the pancreatic ductal system with egress of pancreatic juice into the surrounding tissues. The proportion of the two causes is not really known. Centers that handle a lot of traumatic material will have a lot of pancreatic cysts due to trauma while other centers that do not see much traumatic surgery will have a major proportion of pseudocysts following acute pancreatitis. The signs and symptoms of a pseudocyst are usually quite clearcut and the diagnosis is not a difficult one. The antecedent history of acute pancreatitis or blunt trauma to the abdomen is important. Although it may occur, the silent formation of a pseudocyst is rare. Once the cyst has formed, pain is the most constant symptom and is usually located in the epigastrium. Characteristically the pain is more severe when the patient is lying down and is relieved when he sits up. In virtually all cases an adbominal mass is palpable. It is very characteristic of a pseudocyst that the palpable mass varies in size and consistency from day to day. About 10% of patients with a pancreatic pseudocyst have obstructive jaundice. Many of the patients have varying degrees of intestinal obstruction. This is due to mechanical compression of the bowel, duodenum, and the jejunum, by the cyst. Re-

sults of laboratory tests are variable according to the time they are done in relation to the onset of the disease. Usually a pseudocyst, when it appears after acute pancreatitis, will become evident in about one to two weeks after the attack of acute pancreatitis. Usually by that time the serum amylase has returned to normal. If it remains elevated as it did in this patient a persistent obstruction of the pancreatic duct is very probable. Since pancreatic pseudocyst is caused by acute pancreatitis it might be germane to our discussion to say a few words about the etiology of acute pancreatitis. In general there are three factors that play a role in the causation of experimental acute pancreatitis. These are the ductal factor, the vascular factor and the metabolic factor. The ductal factor includes all the methods of producing experimental pancreatitis, by obstructing the major pancreatic duct, by injecting bile into the major pancreatic duct or by permitting the admixture of pancreatic juice and bile to flow into the pancreatic duct. For many years it was thought that obstruction alone could not produce experimental acute pancreatitis. In theory this was attributed to the inactive form that trypsin is supposed to be in while in the pancreatic ducts. We know now that this is not true and that there is a small amount of activated trypsin in pancreatic juice before it reaches the duodenum. Experimentally acute pancreatitis can be produced by simple obstruction of the pancreatic ducts in face of an actively secreting gland. Transposing experience from the experimental laboratory to clinical practice, we know that in about one-third of patients with acute pancreatitis that this ductal factor plays an important role. In approximitely 30% of patients with acute pancreatitis there is disease of the biliary tree.

The role of pancreatic vascular disturbances in the causation of acute pancreatitis produced by ligation of the pancreatic duct is considerably aggravated by simultaneous production of vascular disturbances either arterial or venous. It is possible that such changes may take place in spontaneous human pancreatitis.

The metabolic factor in chronic pancreatitis is related to the high incidence of alcoholism in patients with acute and chronic pancreatitis or both. Approximately 30 to 60 per cent of patients with acute pancreatic disease have a history of heavy alcoholic intake. Sometimes this is spread out over a matter of years, and other times one can only elicit a history of an acute alcoholic bout preceding the onset of acute pancreatitis. The cause of this relationship is obscure. The answer may lie in specific protein deficiencies that are common to the alcoholic patient. We do know that in severely malnourished infants pancreatic changes not unlike those that may occur in chronic pancreatitis are present. Since pancreatic pseudocyst is but one of the many complications of acute pancreatitis I think it may be apropos to discuss some of the other complications of acute pancreatic disease. Doctor Duval has consented to discuss this aspect of the problem.

Doctor Duval: From the clinical standpoint I have made a list of the complications that I think should be mentioned in terms of the acute attack of pancreatitis. The easiest way for me to think of the complications of pancreatitis is to place them in two groups. The immediate complications which are often of a chemical nature and the delayed and late complications which are often mechanical.

Beginning with the immediate complications of the attack one has to think of hypovolemia and shock. There may be a decrease in the circulating blood volume of from 15 to 25 per cent. Tetany, although not frequently seen the first day, can certainly occur within the first 48 to 72 hours. When it does occur the explanation is the following. The outpouring of pancreatic lipase into tissue spaces produces a breakdown of fatty tissue with a resulting combination of fatty acid and ionized calcium to form soaps. When this occurs the concentration of ionized calcium falls very low and causes clinical tetany. The third immediate complication that one sees with acute pancreatitis is hypoinsulinism. This should be predictable, recognizable and treatable and generally speaking is a completely reversible process provided the patient survives. Paralytic

ileus is part and parcel of the problem of acute pancreatitis, and is treated automatically when a gastric suction tube is placed in the stomach. The latter is a fundamental part of the treatment of acute pancreatitis since by removing acid gastric secretions one also removes one of the stimulatory factors to the pancreas. Another complication I wish to mention is acute noncalculus cholecystitis. This complication must be watched for since it may be a secondary phenomenon incident to an episode of acute pancreatitis and may direct the subsequent course of management. Cholangitis announced by the onset of chills, fever and jaundice may be the cause of the downhill course of a patient who is on a so-called conservative method of management. Bleeding as a complication of acute pancreatitis often goes unrecognized. At least one out of three patients with acute pancreatitis have blood in their stools. This finding is related to the gastritis associated with the alcoholic episode or may be due to the action of pancreatic enzymes on the bowel wall. Pleural effusion is an occasional complication of acute pancreatitis. More will be said about this in a moment. The last complication of the acute episode is pseudocyst. A pseudocyst is not a direct and immediate complication in the sense that it occurs within the first 72 hours although this occasionally does happen. It may be seen in both periods, immediate and delayed.

Now among the delayed complications of acute pancreatitis we have hemorrhage, abscess formation, phlebitis, subphrenic abscess and fistula. The appearance of these complications usually changes the course of treatment. As a rule, pancreatic fistula occurs when the patient has been operated on for the acute attack. Bacterial complications are of tremendous importance in the late stages of the disease. They are usually detectable long after the 72-hour period is gone and they occur in those patients that have survived. The natural history of acute pancreatitis either calls for immediate death or for a survival of longer than 72 hours.

The patients do not usually die on the second or third day. One of the questions that is brought up most frequently regarding a patient with acute pancreatitis is the following: What are the chances of the patients having another attack of acute pancreatitis? If one were to survey the literature at any time the incidence would be reported as ranging from 5 to 50% of recurring attacks. This, of course, depends upon the etiology of the pancreatitis. There is considerable clinical evidence to support the statement that pancreatitis is far more likely to recur in the alcoholic patient. Another one of the late complications of acute pancreatitis is disease of the biliary tree. One of the late complications of acute pancreatitis is the formation of gall stones. We tend to think that pancreatic disease is frequently secondary to disease of the biliary tract and by and large it is. However, we know now that biliary tract disease may become a complicating factor of pancreatic disease. It is centered around the extent of the pancreatic fibrosis incident in the process of repair with involvement of the terminal portion of the common bile duct. Common duct stricture may be overlooked and is one of the hardest things to diagnose unless you are aware of its possible existence and willing to look for it. We are dealing most likely with this type of situation in this patient. The common bile duct stricture complicating acute and/or chronic pancreatitis is in the identical anatomical position from one patient to another. It is usually located in the distal third of the duct. This brings up the question of sphincterotomy. Sphincterotomy for pancreatic or common bile duct stricture is not a logical procedure since the areas of obstruction are usually proximal to the sphincter of Oddi.

Finally, there are two other complications of recurring acute or chronic pancreatitis that I must mention. Carcinoma has been mentioned as a complication of chronic pancreatitis. We do not know whether there is a true relationship between the appearance of carcinoma or whether such a relationship is mainly fortuitous. There is some evidence of a relationship between pancreatitis and pulmonary tuberculosis. The incidence of pulmonary tuberculosis in patients with pancreatic disease is fairly high. An incidence of 19% has been reported.

Doctor Menguy: Pulmonary complications

play an important part in the picture of acute pancreatitis. Doctors Hammarsten and Honska have reviewed their findings at the Medical Center in this regard. Doctor Honska will present their findings.

Doctor Honska: Our interest in the problem of pleural effusion in pancreatitis was stimulated by the discovery of a case of pleural effusion complicating an episode of acute pancreatitis in 1956. This patient was studied by Doctors Hammarsten and Limes. Actually the condition was diagnosed by the amylase determinations on the pleural fluid. We have been fortunate enough to study four patients at this hospital with pancreatitis complicated by accumulation of pleural fluid. The first patient had a pleural fluid amylase level of 53,000 units as compared with a serum amylase of 1,070. The second patient had a pleural amylase level of 1,136 with a serum amylase level of 243. In the third patient the pleural amylase was 800 and the serum amylase was 725. The fourth patient had a pleural amylase of 3,200 with a serum amylase of 400. The interesting point about our first case was the fact that his pleural fluid amylase was always higher than his serum amylase and came down much slower than the level in the serum. The same thing was true in our fourth patient. Lipp and Aaron[1] have reported a 71% incidence of pulmonary complications in patients with acute pancreatitis. We have reviewed 63 cases of acute pancreatitis both in the Veterans Administration Hospital and in the University Hospital. The complications occurred in the acute phase. In 30% of these patients there was x-ray evidence of pulmonary pathology. Fourteen patients had basilar atelectasis in the acute phase. Five patients had pleural effusions. In four patients that died following acute pancreatitis and where post-morten was obtained, pleural effusion was found. Two of these had negative chest x-rays and in the other two patients the x-ray showed atelectasis. Therefore we had a series of nine cases of acute pancreatitis with pleural effusion, giving us an overall total of 15% of our cases of acute pancreatitis having pleural effusion. Several theories have been postulated as to the cause of pleural effusion following acute pancreatitis. We believe that this is due to the rich, lymphatic connection between the abdomen and the thorax running through the diaphragm. It is possible that these connections serve as an auxiliary channel and during times of obstruction to the normal lymphatic drainage these probably open up and therefore we have retrograde drainage of pancreatic secretions into the pleural cavity. One other explanation has been given in regard to direct pancreatic contamination with fat necrosis and here again the lymphatics would come into play. We have no real explanation for the phenomenon of pleural effusion except for these speculations.

Doctor Menguy: I think one other explanation we could give for the occurrence of pleural effusion is the following. I am sure you have all seen a patient with the so-called Gray-Turner sign in acute pancreatitis. This consists in an ecchymotic discoloration of the subcutaneous tissues over the flanks and the anterior abdominal wall. This is due to necrosis and hemorrhage of the parietal tissues under the influence of pancreatic enzymes which have infiltrated the retroperitoneal tissue spaces. I am certain the same thing could occur with the chest complications. The pancreas of course is retroperitoneal. When there is egress of pancreatic juice it tends to follow retroperitoneal tissue planes. In this manner pancreatic secretions could penetrate into the mediastinum and either pleural space by way of the esophageal hiatus.

To get back to the problem of pancreatic pseudocyst, the question now comes up of what to do about these lesions. I think one could safely say without any danger of argument with our Medical confereres at this combined meeting that everyone is in agreement that all pseudocysts of the pancreas should be treated surgically. There are many reasons for this attitude. In many cases persistence of a pseudocyst is incompatible with life. This was the case in this man. The cyst had produced complete obstruction and he could not eat. In about 10% of the patients there is jaundice, which by itself, is an absolute surgical indication. Furthermore, a patient with a pancreatic pseudo-

cyst is at the mercy of very sudden and very serious complications. Due to its very nature, the pseudocyst contains potent proteolytic enzymes which represent a constant menace to surrounding vital structures. This process of tissue digestion and necrosis can allow the cyst to burrow its way into the duodenum, the stomach, the colon. This process is often accompanied by severe hemorrhage. The present treatment of acute pancreatitis has resulted in the appearance of an interesting phenomena. With electrolyte replacement, treatment of shock and infection we are allowing patients with the more severe forms of pancreatitis to survive the initial phase and we are seeing these patients dying a delayed death from the secondary complications of the disease, often due to the pseudocyst. The main complication is delayed hemorrhage due to the action of the pancreatic enzymes.

The pseudocyst in reality is an expanding lesion for two reasons. On one hand the constant secretion of the pancreas empties directly into the cyst so that if you emptied the latter it would recur very rapidly. On the other hand the breakdown of tissue proteins by the proteolytic enzymes of the pancreas results in a formation of smaller protein molecules which give the intracystic fluid a higher osmolarity. Fluid is therefore drawn into the cyst by osmosis. Therefore for two reasons we have a self-expanding lesion that will not be cured by simple evacuation and closure. If drainage is to be used, drainage has to be continuous. Simple excision of the cyst has been and continues to be performed. The usual indication for a cyst excision is a small cyst limited mainly to the tail of the pancreas with rather definite cleavage planes around it. The cases where removal of the cyst is possible are the very cases that would be curable by simple external catheter drainage since the small content of the cyst indicates that the amount of pancreatic secretions feeding the cyst is small. Therefore, excision of the pseudocyst finds only few indications.

Historically the first operation to be performed for a pseudocyst was external drainage by the method of marsupialization. This consists merely in opening the cyst, evacuating it and then suturing the opening of the cyst to the parietal peritoneum. The cyst then becomes a diverticulum of the abdominal wall and drains continually to the outside. Certainly this is the safest procedure that one could perform and is attended by the least mortality, at least at the time of operation. A patient with a marsupialized cyst is a patient who is losing large amounts of water, electrolytes and proteins and therefore is difficult to maintain in a normal, metabolic balance. Another method of draining a cyst externally is achieved by simply inserting a large catheter into the cyst and connecting the catheter to a source of constant suction. This method is preferable because, although you do have a loss of pancreatic juice, the loss is a measurable one, the secretions can be collected and eventually fed back to the patient through a gastric tube or simply mixing secretions with grape juice and having the patient drink them.

There are several ways in which a pancreatic pseudocyst can be drained internally. The most popular and oldest method of internal drainage is the so-called cystogastrostomy. This is an extremely easy procedure to perform. The posterior wall of the stomach actually forms the cyst wall and all that one has to do is to incise the posterior wall of the stomach, thereby entering the cyst. The opening between the cyst and the stomach can be a simple linear incision or one can excise a small ellipse of gastric and cyst wall and run a continuous suture around the opening. This method has theoretical disadvantages. It is not a dependent drainage since the patient would have to lie on his abdomen all the time. Since the drainage is not dependent the cyst becomes a diverticulum of the stomach and gastric contents can penetrate into the cyst. However, this occurs in only 50% of cases. Another theoretical disadvantage is that gastric secretion can be expected to be increased after this procedure due to direct emptying of alkaline pancreatic juice into the antrum of the stomach. Whatever theoretical disadvantages this procedure has one must admit that it is attended by a very low mortality and that the results have been good. The method of

internal drainage that is becoming more and more popular is the so-called Roux en Y drainage. This consists in dividing a proximal loop of jejunum and anastomosing the distal end of the bowel to the cyst and the proximal end of jejunum to the bowel distally. If the vertical limb of the Roux en Y anastomosis is long enough jejunal contents cannot enter the cyst. Another method of achieving the same result is anastomosis of a jejunal loop to the cyst and a defunctionalizing entero-anastomosis proximally. This was the procedure carried out in our patient. We thought it would be preferable in this instance since it is a little more rapid and the patient had already had one major procedure on the biliary tree. There are a few other operations that can be carried out. If the cyst happens to be close to the duodenum one may consider draining the cyst directly to this organ. In other cases the cyst has been moving toward the right gutter and anastomosis between the cyst and the common bile duct was carried out. Doubilet and Mulholland[2] have advocated a new procedure which consists of performing a sphincterotomy and passing a small plastic tube into the cyst via the pancreatic duct and then bringing the plastic tube out along with a T-tube from the common bile duct. They claim good results. Other surgeons think that this is not a good operation because the obstruction of the duct in pancreatitis is not at the sphincter but proximal to it. This holds true for both the common bile duct and the pancreatic duct.

I would like to discuss now the reasons for the biliary intestinal anastomosis in this patient. The anatomy of the duodenal area is such that the distal third of the common bile duct just before it penetrates the duodeum runs through the glandular tissue of the head of the pancreas. Any inflammatory process in the pancreas such as acute or chronic pancreatitis therefore can involve the entire intra-pancreatic portion of the common bile duct producing stricture and obstruction. Under such conditions a sphincterotomy is not a logical procedure since the obstruction is not localized at the sphincter.

Within the past nine months we have had three patients with chronic pancreatitis and recurrence of severe jaundice within a month to two years after sphincterotomy; therefore it is my opinion that in jaundice complicating acute or chronic pancreatitis a biliary short circuiting procedure should be performed. This can be done by anastomosing the common bile duct either to the duodenum or to a Roux en Y loop of jejunum.

Doctor Campbell: Doctor Duval[3] and also Zollinger[4] and others have recommended pancreatojejunostomy in certain patients with chronic pancreatitis. Just this past month this procedure has been superceded in at least one hospital as Doctor Puestow[5] has modified the operation of pancreatojejunostomy in the following manner. He amputates the tail of the pancreas and places a probe in the pancreatic duct all of the way to the duodenum. He then unroofs the entire gland over the probe exposing the pancreatical ductal system. Then an open Roux en Y loop is pulled over the pancreas in the manner of a sleeve right up the mesenteric vessels and then sewed over the pancreas. I am just bringing this up to hear what Doctor Duval has to say about this modification of the retrograde drainage procedure.

Doctor Duval: Doctor Puestow told me himself that he had extended the principle that we tried to establish. It converts a relatively minor operation to a considerably more major one. I would agree that there is a definite place for it but with no immodesty whatsoever, I do not think that it superceded the principles of decompression behind a theoretical obstruction. It is a second operation to do should the first one fail.

REFERENCES

1. W. E. Lipp and A. H. Aaron: Acute Pancreatitis: Further observations of Value in its Recognition; New York Journal of Medicine, 50: 2043, 1950.

2. Doubilet, H. and Mulholland, J. H.: Pancreatic Cysts; Principles of Treatment. Surgery, Gyn. & Obst. 96: 683, 1953.

3. Duval, M. K. Jr.: Caudal Pancreato-jejunostomy for Chronic Relapsing Pancreatitis. Ann. Surg. 140: 775, 1954.

4. Zollinger, R. M., Keith, L. M. Jr., and Ellison, E. H.: Pancreatitis, New Eng. J. of Med. 251: 497, 1954.

5. Puestow, C. B.: Discussion of Paper by Hardy, J. D. and Bowlin, J. W. Ann. Surg. 145: 870, 1957.

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ABSTRACTS

Serum Magnesium in Renal Diseases

WILLIAM O. SMITH,* and JAMES F. HAMMARSTEN.**

A.M.A. Arch. Int. Med. 102: 5-9, July, 1958

Despite a great deal of investigation the central nervous system depression of uremia has not been explained. In view of the known depressive effects of magnesium on the central nervous system we thought it advisable to study serum levels of this cation in uremic patients.

Serum magnesium levels of patients with chronic renal disease were compared to those of 40 healthy men. The patients were divided into three groups: those with no azotemia (NPN < 45), those with azotemia but without CNS depression, and those with uremia and CNS depression.

The patients without azotemia occasionally had extremely low magnesium values. Azotemic patients had elevated values. Patients with uremia and CNS depression had extremely high values.

It was concluded that hypermagnesemia may contribute to the somnolence and eventual coma of uremia. Magnesium administration in any form is contraindicated in azotemia.

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Bronchopulmonary Sequestration in Infancy and Childhood

CHARLES L. WARNER,* ROBERT L. BRITT,** and HARRIS D. RILEY, Jr.***

The Journal of Pediatrics, 53: 521-528, 1958

Bronchopulmonary sequestration is a congenital pulmonary extipia or sequestration associated with an anomalous artery, usually originating from the aorta. Two cases, one intralobar and the other extralobar in type, occurring in children are reported. The latter was associated with congenital absence of the pericardium; both patients were cured by surgical extirpation of the involved segment. A selected review of the literature emphasizing the various theories as to embryological origin, pathology, and clinical manifestations of bronchopulmonary sequestration is presented.

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A Method of Eliminating Air Bubbles In a Bubble-Type Oxygenator

MARY LOU FAGGELLA,* M. N. ZUHDI,** A. E. GREER,*** J. M. CAREY,**** and J. A. SCHILLING.*****

American Journal of Surgery, 96: 696-697, November, 1958

The DeWall-Lillehei oxygenator for direct vision intracardiac surgery is autoclavable, easily assembled, disposable, efficient and dependable. It is the system employed at the University of Oklahoma Medical Center at the present time. The only alteration made in the DeWall-Lillehei oxygenator is in the type of filter placed between the helix and the arterial pump head. The filter used is a sterile, pyrogen-free, disposable, double metal filter, which was employed at the suggestion of DeWall. Eliminating the air bubbles from the helix and filter is an essential step before the beginning of a perfusion. This is usually accomplished by manual endeavors requiring anywhere from fifteen to thirty minutes. A technic has been developed to eliminate this difficulty.

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Generalized Cytomegalic Inclusion Disease, With Emphasis on Roentgen Diagnosis

JOSEPH H. ALLEN, Jr.,* and HARRIS D. RILEY, Jr.**

Radiology, 71: 257-262, August, 1958

1. Although salivary gland infection is poorly understood in many situations, the neonatal primary form, so-called generalized cytomegalic inclusion disease, has emerged as a clear entity.

2. The disease is probably acquired transplacentally, and may involve a few or almost all organ systems.

3. Brain involvement frequently is manifested by calcification around the lateral ventricles, which if present is virtually diagnostic. Signs of brain atrophy are also commonly seen.

4. Marked diffuse bony sclerosis may be demonstrable at birth with atrophic changes becoming apparent in later months. These are probably nonspecific findings.

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Creatine-Phosphate Utilization by Muscle Extracts of Rabbits on Vitamin E-Deficient Diets

MARY CARPENTER,* PAUL McCAY,** and RANWEL CAPUTTO.***

Proceedings of the Society for Experimental Biology and Medicine, 97: 205-209, 1958

A method for determination of the transfer of phosphate from creatine-phosphate to the hexosemonophosphates is described. It has been found that this transference is decreased in the muscle of rabbits fed tocopherol-deficient diets at a time when phosphoglucomutase activity and glycolysis are normal. The decrease in transference is not corrected by addition of ATP. ATP added at concentrations above 0.004 M inhibits phosphoglucomutase.

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Relationship Between Salt Tolerance and Resistance to Chloramphenicol in Staphylococcus Pyogenes

R. E. BOWLING* and H. H. RAMSEY.**

Proceedings of the Society of Experimental Biology and Medicine, 98: 208, 1958

A chloramphenicol-resistant strain of **S. pyogenes** is more sensitive to the inhibitory influence of NaCl and KCl than is its sensitive counterpart.

Restoration of salt tolerance in the chloramphenicol-resistant organism results in a concomitant decrease in chloramphenicol resistance.

The inhibitory influence of chloramphenicol and salts are additive in most instances, sometimes synergistic, and never antagonistic.

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STUDENT RESEARCH

A number of student fellowships are available each year. These permit a few students to pursue an investigation of their own under the guidance of a member of the faculty. These studies are usually done in the evenings and on week-ends since the medical school curriculum provides an elective period of only two weeks. Despite the limited time many of the investigators are first rate. Some obviously are relegated to the archives of unpublished work. In many students the spirit of inquiry first becomes apparent during these fellowships. It would be difficult to measure the effect of the experience in terms of published works only. However, significant contributions to the literature have been made by students. The following abstracts represent work performed by the authors when they were medical students under the supervision of James Hagans.

A controlled study was undertaken to ascertain the ability of Probanthine and of Atropine to effectively inhibit the gastric stimulatory effects of i.m. caffeine, i.v. reserpine, s.c. histamine, and i.v. insulin in healthy human volunteer subjects. The inhibitory agents rather clearly blocked the gastric stimulatory effects of caffeine and of insulin hypoglycemia, but only slightly altered those of histamine and reserpine. The importance of recording not only volume of gastric juice and its concentration of acidity, but also the total output of acid (i.e. reflecting parietal cell activity) was stressed.

It was concluded that histamine and reserpine, unlike caffeine and insulin, exert their gastric stimulatory effects primarily through pathways other than the parasympathetic nervous system, and thus their effects were little altered by adequate parasympathetic blockade.

1. "The Comparative Effects of Atropine and Probanthine on the Stimulated Human Stomach" by Robert L. Rock and George V. Rohrer. The American Journal of Digestive Diseases. Vol. 3, No. 8, pp. 584-593, August 1958.

Ten agents, including two placebos, were tested under controlled double blind conditions for their effectiveness as mydriatic or cycloplegic agents. Pupil size, response to light, ability to read a Snellen eye chart and intraocular tension were measured before and 40 minutes after medication. The intraocular tension was not significantly altered by any agent tested. Neither placebo led to significant alterations in pupil size or ability to read. Atropine, homatropine, Scopolamine, and Cyclogyl were found to be effective mydriatic and cycloplegic agents in white subjects with blue and brown eyes and in Negro subjects with dark eyes. The latter two were less potent in the more heavily pigmented eyes. Neosynephrine and Paredrine were found to induce significant mydriasis, but not cycloplegia. Epherdrine induced significant mydriasis in white subjects with blue and brown eyes, but failed completely in Negro subjects with dark eyes. Pilocarpine induced significant myosis in all three eye type groups, but was considerably less potent in Negro subjects with dark eyes.

1. "A Comparative study of Mydriatic and Cycloplegic Agents" by Richard F. Barbee, M.D., and William O. Smith, Jr., M.D., American Journal of Ophthalmology, Vol. 44, pp. 617-622, November, 1957.

FACULTY NEWS

New Appointments Named By Board of Regents

Kirk T. Mosley, M.D., D.P.H., chairman of the Department of Preventive Medicine and Public Health since 1952, has been appointed associate dean of the University of Oklahoma School of Medicine in charge of special training and research programs.

MOSLEY

This is an additional, part-time position on the administrative staff. Doctor Mosley will continue as department chairman.

His appointment was approved by the University of Oklahoma regents, who also named William W. Schottstaedt, M.D., assistant professor, vice-chairman of the Department of Preventive Medicine and Public Health.

A graduate of Tulane University School of Medicine, Doctor Mosley earned his Master of Public Health and Doctor of Public Health degrees at Harvard School of Public Health. He is a former medical missionary to China, county public health unit director (Arkansas), and army medical officer. Doctor Mosley taught epidemiology at Vanderbilt and Tulane before coming to Oklahoma.

Doctor Schottstaedt, a 1948 graduate of the University of California School of Medicine, came to the Medical Center in 1953.

In other recent action the regents appointed Wayne Henry Schultz, M.D., clinical assistant in radiology, and Leticia Virata Espaldon, M.D., clinical assistant in anestesiology.

SCHULTZ

Doctor Schultz received his M.D. degree at Washington School of Medicine, St. Louis. He interned at Duke University Hospital, then completed residency training at Mallinckrodt Institute of Radiology, (Washington University) and M. D. Anderson Cancer hospital, University of Texas.

Doctor Espaldon won her M.D. at the University of Santo Tomas and interned at the University in Manila. Additional training was in the Research hospital, Kansas City, Missouri, and at University of Oklahoma hospitals, where she served a two-year residency.

ESPALDON

Springall Is New VA Appointment

New director of professional services at the Oklahoma City Veterans Hospital is Arthur N. Springall, M.D., recently appointed assistant professor of preventive medicine and public health at the University of Oklahoma School of Medicine.

SPRINGALL

Doctor Springall was assistant secretary of AMA's Council on Medical Education, in charge of intern training programs and coordination of residency programs, for four years prior to coming to Oklahoma City.

A graduate of Austin college, Sherman, Texas, with a master's degree in psychology, Doctor Springall earned his M.D. degree at the University of Texas Medical Branch, then a Master of Public Health at Yale and a Master of Science in Health and Physical Education at George Williams College, Chicago.

He interned and trained as a resident at Gorgas Hospital, Ancon Canal Zone, later serving as quarantine physician, Panama Canal health department, and assistant superintendent of Gorgas Hospital.

Special Articles

The Residency Problem in Oklahoma

LEO LOWBEER, M.D.

In 1927, Leo Lowbeer, M.D., graduated from the University of Vienna Medical School. After practicing for a while in Vienna, Doctor Lowbeer came to America where he has since been certified by the American Board of Pathology.

Doctor Lowbeer holds memberships in the College of American Pathologists, American Association of Pathologists and Bacteriologists and American Society of Clinical Pathologists. He is also a visiting lecturer in the Department of Pathology, University of Oklahoma School of Medicine.

A member of the Red Cross and Postgraduate Committees of the Tulsa County Medical Society, Doctor Lowbeer is also an Alternate Delegate to the Oklahoma State Medical Association from Tulsa County.

THE RESIDENCY PROGRAMS in the State of Oklahoma are in serious trouble for reasons given in this article.

The rapid advances in medicine have, of necessity, led to rapidly increasing specialization, a fact which some may deplore, others applaud, but all must recognize. Various specialty boards are concerned with the training and the qualification of specialists and demand of their candidates a certain number of years to be spent in residencies in hospitals whose training programs have been approved by the Joint Commission on Accreditation.

While such specialty training is the main objective of a residency program, it brings in return great benefits to those carrying it out as it is invaluable for rendering better scientific patient care as well as for the training of interns. Unfortunately, not enough American-trained physicians are available to fill all vacant resident positions. It is irrelevant whether this shortage is relative because too many residencies are available; or absolute because not enough physicians are available. The fact remains that on an average only 80% of available residencies were filled in 1956 and that of these 80% a large number was filled with foreign graduates. In other specialties, such as pediatrics, neurosurgery, plastic surgery, ophthalmology and pathology even fewer American graduates are available. According to AMA statistics, only 30% of available pathology residencies were filled in 1956 by American graduates; 34% by foreign graduates; and 36% remained vacant. Our own experience corroborates these facts even more drastically, since after three months of advertising for pathology residents in the *Journal of the American Medican Association*, about 100 applications were received, of which only eight came from American graduates none of whom was a serious candidate. This experience is shared by all teaching hospitals in the United States.

In about 40 states these resident positions are, in part, filled with foreign graduates since these states either do not require licenses for their residents, or else give temporary licenses for the training period not dependent upon American citizenship. In Oklahoma and only seven other states, residents have to have a license which is contingent upon American citizenship; foreign graduates are, therefore, excluded and many positions remain vacant.

While the appointment of foreign graduates does not contribute to train more Ameri-

cans in specialities, it does makes it possible for teaching hospitals to carry out their programs in the various specialties thereby providing better patient care and a better education for interns. Without the help of residents, departments such as those of pediatrics, neurosurgery, pathology, etc., understaffed as they are, simply are incapable of properly handling their workload. While the specialty training of foreign graduates does not increase the number of American specialists, it contributes immensely to the training of foreign graduates who then return to their native countries as goodwill ambassadors for the United States and its medical achievements. Thereby medical standards in their countries are raised and their patients helped. This way everybody benefits. What then are the reasons for restrictive legislations such as exist in Oklahoma and seven other states and which prevent the appointment of foreign graduates as residents? One reason is the difficulty of evaluating the education standards of foreign medical schools and the fear that poorly trained residents could be detrimental in responsible residency positions. In the past, it was up to the staffs of teaching hospitals to decide upon the qualifications of foreign graduates and their decision was usually based upon the internship records of the candidates, most of which were obtained in the United States. In general, while the average medical education of foreign physicians was below American standards, it has been the experience of most hospitals, or rather their department heads, that their performance was very creditable and useful; that language difficulties disappeared or diminished within a few months; and that far better departmental service could be rendered with even poorer trained residents than with none at all, which actually was the alternative. It also should be kept in mind that it is the better trained and more ambitious foreign physicians who apply for residencies in the United States.

Rather recently a new AMA sponsored "Educational Council for Foreign Medical Graduates" has been formed which evaluates credentials and gives examinations to foreign physicians in English as well as in medicine, in their native countries as well as in the United States. Sooner or later, these evaluations will be required of foreign candidates for residencies.

A second reason for restrictive legislation is the fear that poorer trained foreign graduates when given even temporary licenses for residency purposes, will somehow settle in the United States to practice medicine, and thereby lower the standards of medicine. Such fears are unjustified since the overwhelming majority of foreign physicians enter the States on the basis of the Exchange Visitor Program and are not permitted by the State Department, nor by their native states, to stay here beyond their training period.

A third reason for restrictive legislation, linked with the second one, is that some understaffed hospitals would want to hire foreign physicians at low salaries if they are given temporary licenses to practice medicine. Such practice should be strongly discouraged but is easily prevented by limiting the appointment of foreign graduates to teaching hospitals.

It is perhaps pertinent to point out that any reference to restrictions in the selection of residents is omitted by the *Journal of the American Medical Association* in its advertisements since as one of the pamphlets states, such advertised restrictions are unlawful in a number of states.

The necessity of filling vacant residencies in a teaching hospital with foreign graduates is recognized even in Oklahoma where the University Medical School has had the privilege to appoint as residents whomever it cared to appoint. It is submitted that despite the obvious superiority of the University as a training center, the same privilege should be given to the few other teaching hospitals in Oklahoma, some of which are growing by leaps and bounds and which with proper staffing can contribute more to the medical progress and prestige of our state than at present.

Summary and Conclusions

The Problem

A. Not nearly enough American-trained physicians are available to carry out hospital

resident programs. In order to carry out these programs, practically all AMA approved hospitals are appointing foreign graduates as residents.

B. The State of Oklahoma, together with only seven other states, requires that residents be licensed. Such license, even if temporary, is at present given on the same basis as a permanent medical license in Oklahoma, requiring American citizenship and proof of adequate medical education. Obviously, foreign residents cannot qualify because they are not American citizens and because little is known about their medical schools.

The Consequences

The residency programs in Oklahoma in certain specialities (particularly Pathology, Pediatrics, Ophthalmology, Plastic Surgery, et al.) are seriously jeopardized except at the University Hospital. This situation is bound to become worse as hospitals get bigger while the supply of residents remains the same.

While this seems to concern primarily the few teaching hospitals in Oklahoma which are accredited for residency training, it seriously affects the quality of medicine available in Oklahoma since without residents the various departments involved cannot function properly, thereby seriously hampering the services rendered to their patients. In addition, a valuable opportunity is thereby missed in Oklahoma to contribute to the improvement of medicine abroad and create ambassadors of good will for the United States, in general, and for Oklahoma, in particular. Therefore, while only five hospitals are involved in Oklahoma, these are the teaching hospitals on which much of the prestige of Oklahoma medicine is based.

The Solution

The following ways to solve the problem are proposed:

(1) Consider residents as post-graduate students of medicine who need no license since they work under the supervision of a licensed physician and specialist. Do not allow non-licensed residents to write prescriptions, sign charts, operate alone, etc. Leave the details to the discretion of the staffs of the teaching hospitals as done in the majority of states. Issue licenses to these residents who are eligible for them under the present laws if they so desire, and give them those privileges which are dependent upon a license. *Or*

(2) Recognize the new Educational Council for Foreign Graduates by requiring evaluation and examination of foreign graduates by that Council.

On that basis, have the State Board of Medical Examiners issue a temporary license not bound by citizenship; only for the residency training period; only in teaching hospitals recognized for residency training; to be renewed annually.

A temporary license for residents as proposed and as given in 40 states could never be used as a permanent license to practice medicine in the United States. Furthermore, the overwhelming majority of foreign physicians who come to the States for postgraduate training, are forced by the State Department as well as by their native countries to return upon completion of their studies.

All opposition to change or amend the Medical Practice Law stems from the legitimate reluctance to admit for permanent medical practice foreign physicians whose training may be inferior, or at best unknown, to the State Board of Medical Examiners. The proposed changes would make an influx of foreign graduates on a permanent basis impossible. It would, however, promote improvement of the residency program in Oklahoma, which at present is most seriously jeopardized, and thereby, with the proposed safeguards, promote improvement of medicine and of medical care in Oklahoma. By helping foreign graduates who come to us for training, we are helping ourselves and will start doing what all the great hospitals throughout America have been forced and have found beneficial to do; beneficial to patients, to physicians, to the United States and to foreign countries.

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A Tale of Two Countries

Medical Aspects of Aging in Oklahoma and England

HERBERT KENT, M.D.*
O.S.M.A. Committee on Health of the Aged

IF CHARLES DICKENS were alive today and visited the United States as he did in 1842, he could have written a dramatic and artistic story of our aged population. Although he realistically portrayed the sufferings of children in *Oliver Twist*, he might easily have paid similar attention to chronic invalidism in older people.

Another Englishman, William Henley, wrote brave words that have become as immortal as life, yet increasingly paradoxical by 20th century standards:

> "And yet the menace of the years
> Finds and shall find me unafraid
> . . . I am the master of my fate
> The Captain of my soul."

After these lines were written, he lay for twenty-two months in the Edinburgh Royal Infirmary with tuberculosis. Without welfare assistance, he went on to become a famous editor!

Men of Henley's stature and philosophy are difficult to find in modern society. Paternalistic governmental trends in England and the United States are leading both great countries down the welfare path toward the destruction of their basic economic foundations.

Modern English society had its beginning around the 15th Century, while America's socio-economic development began several hundred years later. In spite of this great difference in chronological maturity, our country has not only accelerated its growth to the point of equalling or surpassing the desirable qualities of the old country—but it is also rapidly approaching an unfortunate realization of England's point of diminishing returns—socialism! A popular avenue toward this socialistic goal is founded upon the ascending growth of the "elder citizen" segment of our nation's population. Liberals, both in and out of government, have seized upon this admittedly complex and unsolved problem as an entrée to their ultimate "Utopia" of a complete welfare state; and they have done so with alarming effectiveness and unified tenacity.

Highlighting activities in this field is the Forand Bill; a bill, now resting in the House

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Ways and Means Committee, which will provide medical, hospital and nursing care for some 13 million social security beneficiaries. Vociferously supported by labor and indirectly approved by the American Hospital Association, the bill has serious implications that organized medicine must solve if it is to maintain medical freedom and protect U. S. citizens from another form of governmental regimentation. There is nothing wrong with the purpose of the Forand Bill; it simply represents one solution to a problem that must be solved. If the aged group was receiving adequate health care, bills of this type would never have materialized.

Medicine cannot be so presumptious as to think it can stand alone and repel every frontal attack by the growing bands of liberal marauders, particularly with a negative attitude. Where the product of its own achievements, an aging population, is involved, organized medicine is morally obligated to confront a legislative solution to the problem by presenting, with unity and tenacity, a positive program which will insure the well-being of this group without sacrificing the spirit of independence or sound governmental principle.

The American Medical Association has recognized its role of responsibility and, through its Committee on Aging, has initiated a nationwide program designed to thwart an economic evil by developing a health care system for our elder citizenry that is based upon sounder principles. The success of the AMA's program will divert this particular socialistic movement by stimulating state, community and individual responsibility toward the aging group; its failure will force the United States into step with England — and the resultant federal legislation will no doubt be the forerunner of a national program of socialized medicine!

A Glance at England

Ever since the National Health Service Act of 1946, which became effective July 5, 1948, hospital and specialist services of all kinds have been demanded by the British public with enthusiasm. Particularly in London, practically all of the hospital, convalescent, rehabilitation and other institutional facilities have become congested by the swelling tide. The aged and chronically ill, many of whom were previously cared for by relatives, are now handed over to the government. As in the first year of the program, emergency patients are still routed from official to official. Elderly folks often are most apt to suffer for they cannot easily be screened by the Admitting Officer who must seek assistance from the general practitioner. Unfortunately, too, the GP's have been forced into disrepute. They are overworked, underpaid and restricted by regulations to the point that many have decided to leave the country. Crowded offices, excessive clerical work, delayed consultation and diagnostic services have tended to create a figure of a civil servant rather than a professional man. Clinical observation under these conditions has suffered. It is easier to refer a patient to an out-patient department as a substitute to evolving a management program for healing the aged sick. This in turn has over-burdened hospital facilities, and delayed reports from such referrals has exorably squeezed out the practitioner as a family physician. He no longer feels morally obligated for the relief of suffering. This disavowal has become a governmental headache. Loss of medical idealism is affecting the individual physician, and is particularly true of the younger men.

Following an internship, the newly qualified man in Great Britain has already lost one of his many freedoms. To hang up a shingle in an area one chooses is now illegal. Under the Act, local committee approval must be obtained first. These committees are constituted from physicians already in that community and it is easy to appreciate the local politics that prompts their decisions. The aim of these regulations, of course, is to encourage physicians to locate in "under-doctored" communities. However, at the same time, it serves to limit the opportunities for a new man to establish a practice in an area of his own choosing, regardless of desires or abilities.

In contrast to the London picture, here in Oklahoma, as elsewhere in the United

States, many of our peoples are enjoying better medical care than ever before. The best of our hospitals and the best of our physicians are very good indeed—equal, if not better, to any in the world. The individual physician, and especially the recent graduate, is free to accept patients anywhere and anytime. As long as he is a licensed practitioner, he may practice in the community of his choice. This freedom to practice is our most cherished possession.

Our voluntary insurance, such as Blue Cross-Blue Shield and private insurance plans, is without parallel in medical insurance history. Prepaid hospital and medical care yearly account for greater and greater costs of illnesses. Slowly we are solving our other problems, such as the needs for chronic illness, the handicapped and a gradually increasing older population.

In principal cities such as Tulsa and Oklahoma City, we have first-rate hospitals, specialized institutions and nursing homes to take care of the aged, infirm and chronic sick. A 1958 statewide survey by the Oklahoma Nursing Home Association indicated almost 8,000 beds (83% occupancy) were available in addition to institutional facilities. Admission of patients is available to all through the family physician. Many of the physicians also have a voice in the policies and practices of such facilities. In addition, when patients are referred for services or consultation, reports are prompt and efficient in accord with sound business practices. Since such medical costs are private for the most part, these are kept, as a rule, within the national averages.

AMA Attitude

At its House of Delegates meeting in June, 1958, the American Medical Association admitted that official medical society recognition of the problems of aging and the aged had been slow to develop. To accelerate such recognition and to provide state and local contacts for the AMA Committee on Aging, all state medical associations have been urged to establish similar committees.

To assist the local groups, the AMA developed suggested guides for the formulation and operation of state and county committees. Among these suggestions, was an outline to medicine's blueprint for "The New Era of Aging":

1) Stimulation of a realistic attitude towards aging.

2) Promotion of health maintenance programs and wider use of restorative and rehabilitation services.

3) Extension of effective methods of financing health care for persons over 65.

4) Expansion of skilled personnel training programs and improvement of medical and related facilities for older people.

5) Amplification of medical and socio-economic research in problems of the aging.

6) Leadership and cooperation in community activities for senior citizens.

OSMA Steps Forward

In response to the AMA request, state president E. C. Mohler, M.D., appointed Hayden H. Donahue, M.D., as chairman of the Oklahoma Committee on Health Care of the Aged and asked him to develop a program for the state association. It soon became evident to Doctor Donahue that the overall problem was multi-faceted and that sub-committees would be necessary for an effective program. He therefore created a general committee and five sub-committees to cover the following areas: Rehabilitation and Restoration; Insurance and Retirement; Public Health and Home Care; Nursing Homes; and Research.

The physicians serving with Doctor Donahue and his various committees have a Herculean task. They must undertake the solution of a growing and urgent problem; a problem that will not solve itself and one upon which the medical profession must place tremendous and immediate emphasis. Physicians are compelled to make a concerted effort, individually and collectively, to answer the many questions being raised about the health care status of our aging population and to make concrete recommendations for corrective action.

Do we have a positive health program for

our older citizens that is second to none in the world? Our ingenuity for keeping our professional freedom is being tested on this rock in the stream. Will we founder or pass over to a clear journey ahead? Already additional hazards are visible amongst the lawmakers. A new Congress is making extensive preparations to correct a deficit in the medical care of the aged. Do we have an answer the "voluntary way?"

Medicine today is at the crossroads. England and other components of the British Common Wealth, Scandanavia and some of the continental democracies, have made their choice. We in the United States stand where Britain stood almost 20 years ago. There have been changes, but basic precepts remain. Do we have the capacity for mastering our fate? Abroad there are many doubts. Recent visits to our shores by respectable and well known Britons have presented factual and clear evidence of the swelling tide towards a national federal medical service. Are we heeding the dire forebodings of our good friends and colleagues?

Just to pause and listen to the remarks of Sir Heneage Ogilvie,[1] Surgeon to Guy's Hospital, on the Welfare State is revealing:

"The road of scientific advance is marked by milestones on which are inscribed the names of men of genius: but the man of genius can do no more than find the key that fits the lock of a new door. To turn that key, to push open that door, to explore the passages to which it leads and find which of them are profitable, and to unlock further doors as they are encountered, he needs help.

"As a profession, we stand or fall by each integral physician to develop that apparatus, to answer the call of our times, to provide a workable solution for a nation that is gradually becoming one of an older population needing supplemental health." He continues:

"This question confronts the American medical profession today. The more courageous among them realize that now while the sun of prosperity still shines, they have a unique opportunity to plan a health service along lines of their own choosing, to work with their government as partners rather than as servants, to extend their research on national lines to unimagined goals. Others, like Gallio, care for none of these things, but shut their eyes to the facts around them."

Oklahoma physicians must take a good objective look at themselves and their present position, as if through the eyes of the public and the lawmakers. It is apparent that a tremendous problem has presented itself; a problem that must have our immediate attention if we are to have any voice in its solution.

It has been said that history has established a cycle of development in which the people progressively pass through stages of slavery, hope, revolution, prosperity and apathy. If we are to resign ourselves to the state of "apathetic" development, then we are but one short step from slavery! Will we take advantage of this unique opportunity to plan an active role in the planning of our future and the future of those we serve—or will we slumber with Gallio and shut our eyes to the facts around us?

This is the first of a series of special articles to be presented by members of the Committee on Health Care of the Aged. Next month an article by John W. DeVore, M.D. will illustrate what one community is doing about the aging problem.

1. Ogilvie, Sir Henage: The Granny Racket, Brit. Med J. March 25, 1950, pp. 683-685.

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A multitude of case histories are now adding individual clinical color to the earlier controlled investigations which defined the actions of Nilevar as an effective aid in reversing negative nitrogen balance and in building protein tissue.

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PRESIDENT'S LETTER

Without much question, the problem of prepaid medical care for the age sixty-five plus and low income groups is the most pressing issue facing organized medicine. Next year is another election year and one in which the proponents of federalized medical care will press the issue with all their force.

This challenge to the free enterprise of medicine became acute over a year ago with the writing of the Forand Bill, which now rests in the Ways and Means Committee but is by no means a forgotten issue. The implications that this type of legislation holds are well known to most of us, and should such a proposed bill become law, American medicine will be swept into the stream of socialism beyond the point of return.

Certain facts expressed through public opinion have been made clear to us. First, society will not be satisfied until a medical care program for the aged and low income groups has been provided, regardless of the source; and secondly, there are only two sources sufficiently capable of providing such coverage on a broad basis—the Federal Government or the integrity of Free Enterprise through Organized Medicine.

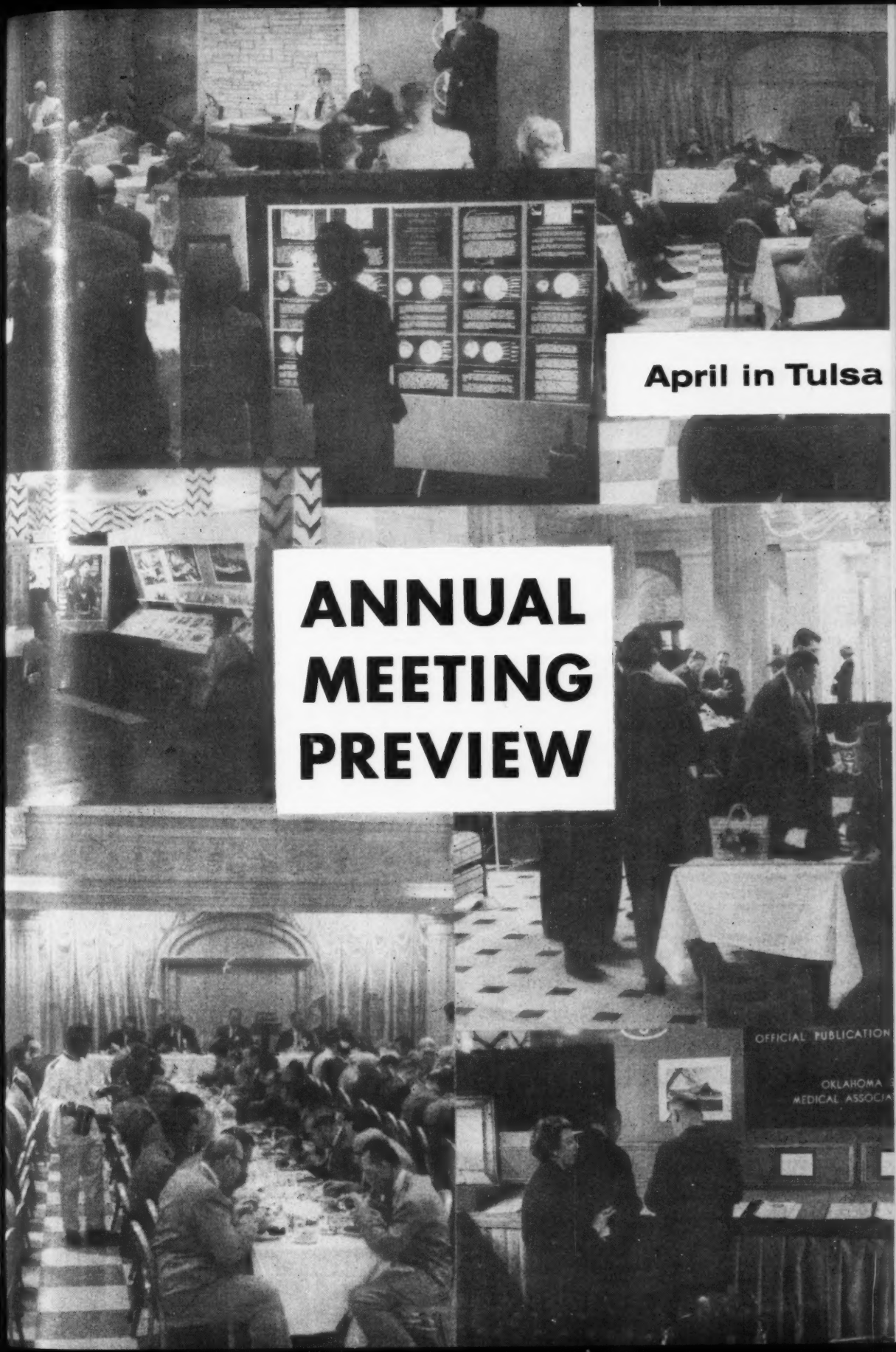
How then is Organized Medicine to meet this demand? Or is it our responsibility to solve? To answer these questions it might be well to turn back the time twenty-five years and look at the picture of hospital and medical care as it was in the depression. At that time private insurance was asked to provide a prepayment plan. The reply was, "It can't be done," yet, through the efforts of a few determined Oklahoma doctors, Blue Cross was organized and has successfully led the way to the present enrollment of 50,000,000 satisfied members. Certainly we can again meet this crisis through our own creation—Blue Cross and Blue Shield. If Medicine doesn't take the initiative, the government will!

The American Medical Association no longer views this problem in the light of speculation or even just positive thinking, but one of immediate action. That is why the governing body has recommended the acceptance of a prepayment service type plan for our Senior Citizens and the low income groups, and it is the medical profession, along with Blue Cross and Blue Shield, that has been asked to fulfill this mission.

It is now up to the doctors of Oklahoma to make a decision. Are we going to meet the challenge and help write an acceptable service contract for this group of our citizens this year? Or are we going to let the Department of Health, Education and Welfare write it for us by 1961?

E. C. Mohler, M.D.

E. C. MOHLER, M.D.
President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DIGEST OF EVENTS

HEADQUARTERS HOTEL

The Mayo, Tulsa's largest and most attractive hotel, will be headquarters for the 53rd Annual Meeting of the Oklahoma State Medical Association.

HOTEL ACCOMMODATIONS

Physicians are urged to write now for hotel accommodations by addressing: Hotels Committee, Tulsa County Medical Society, B9 Medical Arts Building, Tulsa 19, Oklahoma. Please do not write hotels direct. The Tulsa Hotel Association requires that all reservations be handled through a central committee. Please state type of accommodations desired, date and time of arrival and departure, and choice of hotels (Adams, Alvin, Bliss, Mayo, Tulsa). Reservations will be filled in the order of receipt, and most convention visitors will be housed at The Mayo. A very limited number of two-bedroom suites are available at The Mayo; there are no one-bedroom suites available. All reservations will be confirmed in writing. Tulsa has a number of attractive motels and the Hotels Committee will be happy to book motel accommodations as desired.

REGISTRATION

Registration will open Monday, April 20, 1959, at 8:00 a.m. in the Main Lobby of The Mayo. Delegates may register, both for the House of Delegates and the General Meeting, on Sunday, April 19, 1959, on the Mezzanine of The Mayo beginning at 9:00 a.m. Physicians are asked to present their 1959 membership cards when registering. Guest privileges will be accorded medical officers of the Armed Forces, interns and residents, and physicians who are members of other state medical associations. All other persons will be registered by permission of the Hotels & Registration Committee.

COUNCIL

The Council of the Oklahoma State Medical Association will meet on Saturday, April 18, 1959, at 1:00 p.m. in the Emerald Room of The Mayo.

HOUSE OF DELEGATES

The House of Delegates of the Oklahoma State Medical Association will meet on Sunday, April 19, 1959, at 10:00 a.m. in the Pompeian Room of The Mayo. The session will adjourn for lunch and reconvene at an hour to be announced by the Speaker. Doctor Gunnar Gundersen of LaCrosse, Wisconsin, President of the American Medical Association, will speak before the House of Delegates on the current activities of the AMA.

SCIENTIFIC EXHIBITS

A selection of attractive exhibits by individual physicians and medical and health organizations will be on display in the Ivory Room of The Mayo, Monday and Tuesday, April 20-21, from 8:30 a.m. to 5:00 p.m., and Wednesday, April 22, from 8:30 a.m. to 12:00 Noon. Convention visitors are urged to inspect these educational exhibits. A complete list of the scientific exhibits appears elsewhere in this issue of *The Journal.*

TECHNICAL EXHIBITS

Forty-three displays by firms offering products and services of interest to Oklahoma doctors will be a special feature of the 53rd Annual Meeting. The technical exhibit is divided into two sections, one in the Main Lobby of The Mayo adjacent to General Registration, and one on the 16th Floor of The Mayo adjacent to the Crystal Ballroom. Exhibits will be open from 8:30 a.m. to 5:00 p.m., Monday and Tuesday, April 20-21, and from 8:30 a.m. to 12:30 p.m. on Wednesday, April 22. A complete list of technical exhibitors appears elsewhere in this issue of *The Journal.* Physicians are urged to visit each exhibit and inspect the many products and services on display.

PHYSICIANS HOBBY SHOW

The Annual Physicians Hobby Show, a delightful display of the crafts and hobbies of Oklahoma doctors, will be located in the Ivory Room of The Mayo. Sponsored by the Woman's Auxiliary, the Hobby Show invites displays from all State physicians.

SCIENTIFIC SESSIONS

A general scientific session will be held each morning, Monday through Wednesday, in the Crystal Ballroom of The Mayo. There will be two afternoon sessions, one in the Crystal Ballroom and one in the Emerald Room of The Mayo. A complete program for the scientific sessions appears in this issue of *The Journal.*

MEDICAL MOTION PICTURES

A selection of motion pictures will be shown each morning, Monday through Wednesday, April 20-22, in the Metropolitan Room of The Mayo, beginning at 9:00 a.m. A complete schedule of showings appears in this issue of *The Journal.* A limited number of films will be repeated, upon request, at the conclusion of the Wednesday showings. All films are sound and many are in color.

ROUNDTABLE LUNCHEONS

Roundtable luncheons will be held on Monday and Tuesday, April 20-21, at 12:30 p.m. in the Pompeian Room of The Mayo. A panel of guest speakers will answer questions and discuss current topics of medical interest. Tickets should be purchased at the Registration Desk at the time of registering for the meeting.

PAST-PRESIDENT'S BREAKFAST

The Annual Past President's Breakfast of the Oklahoma State Medical Association will be held on Tuesday, April 21, 8:00 a.m. in the French Room of The Mayo.

ANNUAL GOLF TOURNAMENT

The Annual Golf Tournament will begin at 12:00 noon, on April 22 at the Oaks Country Club. The greens fee is $3.00 per person. A buffet dinner will be served in the Clubhouse at 7:00 p.m.

Golfers will register in the Main Lobby at the time of registration for the annual meeting. Buffet dinner tickets are $7.50 and must be purchased in advance at the registration desk.

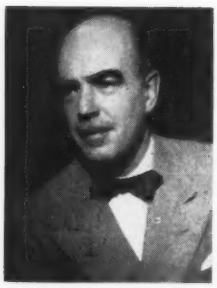
INAUGURAL DINNER-DANCE

Beginning at 6:00 p.m. on April 21 with a social hour and reception in the Pompeian, French and Founders Rooms at The Mayo, the President's Inaugural Dinner-Dance will feature a diversified evening's entertainment. Charlie Barnet and his orchestra will furnish music for dancing; Doctor James Brown and his Greene County Medical Society Boys will present "Your Medical Hit Parade"; and The Topnotchers, a trio of musical comedians, will present a floorshow.

The dinner will be held in the Crystal Ballroom of The Mayo at 7:00 p.m. Dancing will begin at 9:00 p.m., just one block from The Mayo, in the Cimarron Ballroom.

Distinguished Guest Speakers

P. ROBB McDONALD, M.D.
Philadelphia, Pennsylvania



Associate Professor of Ophthalmology, Graduate School of Medicine, University of Pennsylvania. Attending Surgeon, Wills Eye Hospital, and Ophthalmologist In Chief, Lankenau Hospital of Philadelphia. Medical Degree, McGill University Faculty of Medicine, Class of 1934. Diplomate, American Board of Ophthalmology. Fellow, American Academy of Ophthalmology and Otolaryngology. Member, American Ophthalmological Society. Consulting Ophthalmologist to the Surgeon-General, United States Air Force. *Sponsors: D. L. Edwards, M.D., Tulsa, and Charles G. Stuard, M.D., Tulsa.*

GUNNAR GUNDERSEN, M.D.
LaCrosse, Wisconsin

President, American Medical Association. Medical Degree, Columbia University College of of Physicians and Surgeons, Class of 1920. Formerly President, Wisconsin State Medical Society, 1941-42. Elected to the House of Delegates of the American Medical Association in 1937, and eleven years later was named to the AMA Board of Trustees. Formerly Chairman, Joint Commission On Accreditation Of Hospitals. Diplomate, American Board of Surgery. Fellow, American College of Surgeons. Attending Surgeon, LaCrosse Lutheran Hospital, and Director of Surgery, Gundersen Clinic of LaCrosse. *Sponsors: John E. McDonald, M.D., Tulsa, and Felix R. Park, M.D., Tulsa.*

HARWELL WILSON, M.D.
Memphis, Tennessee

Professor and Chief of the Division of Surgery, University of Tennessee School of Medicine. Medical Degree, Vanderbilt University School of Medicine, Class of 1932. Formerly member of the faculty of the University of Chicago School of Medicine. Diplomate, American Board of Surgery. Fellow, American College of Surgeons. Member, American Surgical Association, Southern Surgical Association, Society of Vascular Surgery, Southeastern Surgical Congress, and Society of University Surgeons. Recipient of Distinguished Service Award from University of Chicago Alumni Association, 1952. *Sponsors: John G. Matt, M.D., Tulsa, and Charles E. Brighton, M.D., Tulsa.*

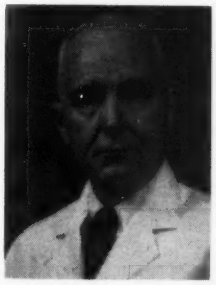
E. PERRY McCULLAGH, M.D.
Cleveland, Ohio

Chairman of the Department of Endocrinology and Metabolism, Cleveland Clinic. Medical Degree, University of Manitoba Faculty of Medicine, Class of 1924. President, American Endocrine Society. Diplomate, American Board of Internal Medicine. Fellow, American College of Physicians. Member, American Diabetes Association, Central Society for Clinical Research, and the American Goiter Association. Author of numerous medical articles on diabetes, Greaves disease, and Aldosterone-producing tumors of the adrenal gland. *Sponsors: Vincel Sundgren, M.D., Tulsa and Henry A. Brocksmith, M.D., Tulsa.*

ISADORE DYER, M.D.
New Orleans, Louisiana

Professor of Obstetrics, Tulane University School of Medicine. Director of the Division of Obstetrics, Tulane Unit, Charity Hospital of New Orleans. Medical Degree, Tulane University School of Medicine, Class of 1933. Diplomate, American Board of Obstetrics & Gynecology. Fellow, American College of Surgeons. President-Elect, Central Association of Obstetricians & Gynecologists. Member, American Association of Obstetricians & Gynecologists. Member, American College of Obstetricians & Gynecologists. Past-President, New Orleans Obstetrical & Gynecological Society. *Sponsors: Matthew B. Moore, M.D., Tulsa, and James T. Maddox, M.D., Tulsa.*

CHARLES B. HUGGINS, M.D.
Chicago, Illinois



Professor of Urology, University of Chicago School of Medicine. Director of the Ben May Laboratory for Cancer Research. Medical Degree, Harvard Medical School, Class of 1924. Recipient of honorary degrees from Acadia University, Yale University, Washington University, Leeds University, Torino University, and Madrid University. Recipient of numerous awards and citations for his outstanding research in the field of cancer. Gold Medal, 1955, Association of American Medical Colleges; The Charles Mickle Fellowship, 1958, University of Toronto; Gold Medal, 1953, American Cancer Society; etc. Honorary Member, Royal Society of Medicine of London. *Sponsors: Maxwell A. Johnson, M.D., Tulsa, Henry S. Browne, M.D., Tulsa., and Berget H. Blocksom, M.D., Tulsa.*

ORMAND C. JULIAN, M.D.
Chicago, Illinois

Professor of Surgery, University of Illinois School of Medicine. Attending Surgeon, Presbyterian-St. Luke's Hospital of Chicago. Medical Degree, University of Chicago School of Medicine, Class of 1937. Ph.D. (Surgery), University of Chicago, 1942: Diplomate, American Board of Surgery. Fellow, American Surgical Association. Fellow, American College of Surgeons. Member, Society of Clinical Research, Society for Vascular Surgery, Central Surgical Association, International Society of Angiology, and the Halstead Society. Consultant to the United States Veterans Administration. *Sponsors: N. C. Gaddis, M.D., Tulsa, and Joseph Fulcher, M.D., Tulsa.*

MICHAEL L. MASON, M.D.
Chicago, Illinois

Professor of Plastic and Reconstructive Surgery, Northwestern University School of Medicine. Associate Editor, Surgery, Gynecology & Obstetrics. Editorial Board, Journal of Bone & Joint Surgery. Medical Degree, Northwestern University School of Medicine, Class of 1924. Ph.D., Northwestern Graduate School, 1931. Vice-President, American College of Surgeons. Diplomate, American Board of Surgery. Diplomate, Founders Group, American Board of Plastic Surgery. Member, American Surgical Association, Central Surgical Association, Association of Military Surgeons. Past-President, Western Surgical Association. *Sponsors: Worth M. Gross, M.D., Tulsa and John C. Dague, M.D., Tulsa.*

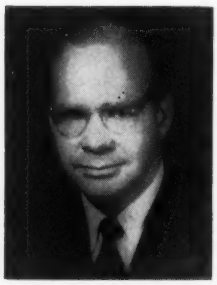
E. D. BRONSON, L.L.B.
San Francisco, California

Widely known authority on legal medicine. Member of the law firm of Bronson, Bronson & McKinnon, San Francisco. Legal Education, University of California Law School, Class of 1922. Formerly President, American College of Trial Lawyers. Member, Bar Association of San Francisco, California State Bar Association (formerly Vice-President, 1953), American Bar Association, International Association of Insurance Counselors, and the American Judicature Society. Author of numerous articles and reviews in the field of medicolegal jurisprudence. *Sponsors: Marshall O. Hart, M.D., Tulsa, and Maurice P. Capehart, M.D., Tulsa.*

CLARK H. MILLIKAN, M.D.
Rochester, Minnesota

Consultant in Neurology, Mayo Clinic. Associate Professor of Neurology, The Mayo Clinic Foundation, Graduate School of Medicine, University of Minnesota. Medical Degree, University of Kansas School of Medicine, Class of 1939. Formerly member of the faculty of State University of Iowa School of Medicine. Diplomate, American Board of Psychiatry & Neurology. Fellow, American College of Physicians. Fellow, American Academy of Neurology. Member, Association For Research in Nervous and Mental Diseases, American Neurological Association, and American Association of University Professors. *Sponsors: Robert L. Imler, Jr., M.D., Tulsa, and Tom R. Turner, M.D., Tulsa.*

WILLIAM D. DAVIS, JR., M.D.
New Orleans, Louisiana

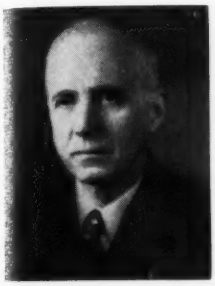


Assistant Professor of Medicine, Tulane University School of Medicine. Head of the Section on Gastroenterology of the Ochsner Clinic and Ochsner Foundation Hospital. Visiting Physician, Charity Hospital of New Orleans. Consultant to the United States Veterans Administration Hospital and the United States Public Health Service Hospital of New Orleans. Medical Degree, Tulane University School of Medicine, Class of 1943. Diplomate, American Board of Internal Medicine. Fellow, American College of Physicians. Member, Central Society for Clinical Research. Associate Member, American Gastroenterologic Association. *Sponsors: William J. O'Meilia, M.D., Tulsa, and William S. Jacobs, M.D., Tulsa.*

ROBERT W. BUXTON, M.D.
Baltimore, Maryland

Professor of Surgery, University of Maryland School of Medicine. Medical Degree, University of Kansas School of Medicine, Class of 1936. Formerly member of the faculty of the University of Michigan School of Medicine, 1942-55. Diplomate, American Board of Surgery. Fellow, American College of Surgeons. Member, American Surgical Association, Central Surgical Association, Society of Vascular Surgery, the Frederick A. Coller Surgical Society, International Society of Angiology, International Cardiovascular Society, and the Southern Surgical Association. *Sponsors: Lester I. Nienhuis, M.D., Tulsa and Dale E. Newman, M.D., Tulsa.*

WILLARD H. PARSONS, M.D.
Vicksburg, Mississippi



Clinical Associate Professor of Surgery, University of Mississippi School of Medicine. Chief of Staff and Director of Surgery, Vicksburg Hospital and Clinic. Attending Surgeon, University Hospital. Senior Surgical Consultant, Kuhn Memorial Hospital. Medical Degree, Jefferson Medical College, Class of 1920. Diplomate, American Board of Surgery. Formerly Chairman of the Board of Governors and now member of the Board of Regents, American College of Surgeons. Councilor, Southeastern Surgical Congress. Formerly Vice-President, Southern Surgical Association. Fellow, American Surgical Association. Past-President, Southern Society of Clinical Surgeons. *Sponsors: Ralph A. McGill, M.D., Tulsa, and William P. Fite, M.D., Muskogee.*

NATHAN J. SMITH, M.D.
Madison, Wisconsin

Professor and Chairman of the Department of Pediatrics, University of Wisconsin School of Medicine. Medical Degree, University of Wisconsin School of Medicine, Class of 1943. Formerly member of the faculty of Temple University School of Medicine, 1951-53, and University of Southern California School of Medicine, 1954-57. Diplomate, American Board of Pediatrics. Member, American Academy of Pediatrics, Pediatric Research Society, Society of Experimental Medicine & Biology, International Society of Hematology. Formerly Fulbright Scholar at the University of Paris, Paris, France, 1950. *Sponsors: G. R. Russell, M.D., Tulsa, and Walter F. Sethney, M.D., Tulsa.*

ANNUAL MEETING
TELEPHONE MESSAGE CENTER

While you are attending the Annual Meeting, your emergency calls may be referred to

GIbson 7-8032

Located on the 16th floor of the Mayo Hotel

Courtesy of

Tulsa Medical Service Association

MONDAY, April 20, 1959

MORNING SESSION: GENERAL—Crystal Ballroom

E. C. Mohler, M.D., Ponca City, Presiding

9:00 a.m. THE ACUTE SURGICAL ABDOMEN
Harwell Wilson, M.D., *Memphis, Tennessee*

9:40 a.m. MAMMARY CANCER
Charles B. Huggins, M.D., *Chicago, Illinois*

10:20 a.m. CURRENT TRENDS IN THE FIELD OF THYROID DISEASE
E. Perry McCullagh, M.D., *Cleveland, Ohio*

11:00 a.m. CLINICAL AND THERAPEUTIC ASPECTS OF CHRONIC OBSTRUCTION OF THE BRANCHES OF THE AORTIC ARCH
Ormand C. Julian, M.D., *Chicago, Illinois*

11:30 a.m. DIFFERENTIAL DIAGNOSIS OF VARIOUS TYPES OF STROKES
Clark H. Millikan, M.D., *Rochester, Minnesota*

12:30 p.m.: ROUNDTABLE LUNCHEON—Pompeian Room

Walter E. Brown, M.D., Tulsa, Presiding

Guest Participants: Harwell Wilson, M.D., E. Perry McCullagh, M.D., Clark H. Millikan, M.D., Ormand C. Julian, M.D., Charles B. Huggins, M.D.

AFTERNOON SESSION: SECTION ONE—Crystal Ballroom

N. C. Gaddis, M.D., Tulsa, Presiding

2:00 p.m. TOTAL ADRENALECTOMY IN THE TREATMENT OF ADVANCED CARCINOMATOSIS
Willard H. Parsons, M.D., *Vicksburg, Mississippi*

2:20 p.m. SYMPOSIUM ON CURRENT MANAGEMENT OF METASTATIC CARCINOMA
Charles B. Huggins, M.D., *Chicago, Illinois*
Harwell Wilson, M.D., *Memphis, Tennessee*
E. Perry McCullagh, M.D., *Cleveland, Ohio*
Willard H. Parsons, M.D., *Vicksburg, Mississippi*
Lucien M. Pascucci, M.D., *Tulsa, Oklahoma*

3:30 p.m. EXPERIENCES IN THE SURGICAL TREATMENT OF TUMORS OF THE LIVER
Harwell Wilson, M.D., *Memphis, Tennessee*

4:10 p.m. CANCER OF THE PROSTATE
Charles B. Huggins, M.D., *Chicago, Illinois*

AFTERNOON SESSION: SECTION TWO—Emerald Room

James W. Kelley, M.D., Tulsa, Presiding

2:00 p.m. DUPUYTREN'S CONTRACTURE
Michael L. Mason, M.D., *Chicago, Illinois*

2:30 p.m. THE RH PROBLEM—1959
Nathan J. Smith, M.D., *Madison, Wisconsin*

3:10 p.m. SOME UNUSUAL INDICATIONS FOR CESAREAN SECTION
Isadore Dyer, M.D., *New Orleans, Louisiana*

3:50 p.m. TEN YEARS EXPERIENCE WITH CESAREAN SECTION IN 50-BED GENERAL HOSPITAL
B. C. Chatham, M.D., *Chickasha, Oklahoma*

4:10 p.m. SERIOUS COMPLICATIONS OF INTRAOCULAR SURGERY
P. Robb McDonald, M.D., *Philadelphia, Pennsylvania*

TUESDAY, April 21, 1959

MORNING SESSION: GENERAL—Crystal Ballroom

Edward L. Moore, M.D., Tulsa, Presiding

8:40 a.m. WHAT ARE WE DOING WITH OUR STROKE PATIENTS?
Herbert Kent, M.D., *Oklahoma City, Oklahoma*

9:00 a.m. CURRENT CONCEPTS IN THE TREATMENT OF STROKES
Clark H. Millikan, M.D., *Rochester, Minnesota*

9:40 a.m. LOOK AND SEE-OPHTHALMOLOGICAL ASPECTS OF SYSTEMIC DISEASES
P. Robb McDonald, M.D., *Philadelphia, Pennsylvania*

10:10 a.m. REPAIR OF HAND TENDONS
Michael L. Mason, M.D., *Chicago, Illinois*

10:50 a.m. INDICATIONS FOR HYSTERECTOMY—WHEN AND WHY
Isadore Dyer, M.D., *New Orleans, Louisiana*

11:30 a.m. THE TREATMENT OF MALIGNANT SALIVARY GLAND TUMORS
Robert W. Buxton, M.D., *Baltimore, Maryland*

12:30 p.m.: ROUNDTABLE LUNCHEON—Pompeian Room

William Orlando Smith, M.D., Tulsa, Presiding

Guest Participants: Clark H. Millikan, M.D., Isadore Dyer, M.D., Robert W. Buxton, M.D., Michael L. Mason, M.D., P. Robb McDonald, M.D.

AFTERNOON SESSION: SECTION ONE—Crystal Ballroom

Byron W. Steele, Jr., M.D., Tulsa, Presiding

2:00 p.m. SYMPOSIUM OF THE CURRENT MANAGEMENT OF RECURRING ABDOMINAL PAIN OF OBSCURE ORIGIN
William D. Davis, Jr., M.D., *New Orleans, Louisiana*
Robert W. Buxton, M.D., *Baltimore, Maryland*
Isadore Dyer, M.D., *New Orleans, Louisiana*
Nathan J. Smith, M.D., *Madison, Wisconsin*

AFTERNOON SESSION: SECTION TWO—Emerald Room

Rayburne W. Goen, M.D., Tulsa, Presiding

2:00 p.m. VASCULAR COMPLICATIONS OF DIABETES MELLITUS
E. Perry McCullagh, M.D., *Cleveland, Ohio*

2:40 p.m. INDICATIONS FOR OPEN HEART REPAIR OF CONGENITAL AND ACQUIRED CARDIAC LESIONS IN ADULTS
Ormand C. Julian, M.D., *Chicago, Illinois*

3:10 p.m. AORTIC ANEURYSMS
John M. Carey, M.D., and Allen E. Greer, M.D., *Oklahoma City, Okla.*

3:25 p.m. MANAGEMENT OF EMERGENCY COMPLICATIONS IN THE OPERATING AND RECOVERY ROOMS
J. Moore Campbell, M.D., and Leo J. Starry, M.D., *Oklahoma City, Okla.*

3:40 p.m. BLOOD PLATELETS AND THROMBOCYTOPENIA IN PEDIATRIC PATIENTS
Nathan J. Smith, M.D., *Madison, Wisconsin*

4:20 p.m. REVERSIBLE LIVER DISEASE
William D. Davis, Jr., M.D., *New Orleans, Louisiana*

WEDNESDAY, April 22, 1959

MORNING SESSION: GENERAL—Crystal Ballroom

Alfred T. Baker, M.D., Durant, Presiding

8:40 a.m. HYPERCORTISONISM OCCURRING IN PATIENTS WITHOUT RHEUMATOID ARTHRITIS AND SYSTEMIC LUPUS ERYTHEHATOSUS
Mary L. Duffy, M.D., John A. Blaschke, M.D. and J. N. Owens, Jr., M.D., *Oklahoma City, Oklahoma*

9:00 a.m. A PRACTICAL APPROACH TO THE HAZARDS OF MALPRACTICE
E. D. Bronson, L.L.B., *San Francisco, California*

9:40 a.m. GASTROINTESTINAL TRACT TUMORS OF SMOOTH MUSCLE ORIGIN
Robert W. Buxton, M.D., *Baltimore, Maryland*

10:20 a.m. OUR PRESENT OBLIGATION IN CARCINOMA OF THE STOMACH
William D. Davis, Jr., M.D., *New Orleans, Louisiana*

11:00 a.m. TREATMENT OF INTERTROCHANTERIC FRACTURES BY WELL LEG TRACTION
Jack L. Richardson, M.D., *Tulsa, Oklahoma*

ATTENTION

COUNTY MEDICAL SOCIETIES

If your society contemplates introducing a resolution at the Annual Meeting in Tulsa, April 19, it would be appreciated if such resolution could be made available to the executive office at the earliest possible time.

Clinton Gallaher, M.D.
Speaker, House of Delegates

Medical Motion Pictures

Daily showings of new sound and color medical motion pictures have been scheduled for the 53rd Annual Meeting of the Oklahoma State Medical Association each morning in the Metropolitan Room of The Mayo.

The schedule is as follows:

MONDAY, APRIL 20, 1959

9:00 a.m. "DIAGNOSIS AND MANAGEMENT OF ARTHRITIDES."
9:32 a.m. "ANEURYSMS OF THE ABDOMINAL AORTA."
9:85 a.m. "COLON SURGERY—A PANEL DISCUSSION."
10:41 a.m. "THE STORY OF RENAL CALCULI."
11:14 a.m. "OPEN METHOD OF BURN THERAPY."
11:34 a.m. "CATARACT EXTRACTION."

TUESDAY, APRIL 21, 1959

9:00 a.m. "THE MEDICAL WITNESS."
9:35 a.m. "CHOLECYSTECTOMY."
10:13 a.m. "MICROGNATHIA AND ITS CORRECTION."
10:27 a.m. "CARDIAC ARREST."
10:55 a.m. "DISORDERS OF THE HEART BEAT."
11:16 a.m. "CARCINOMA OF THE BREAST."

WEDNESDAY, APRIL 22, 1959

9:00 a.m. "RADIOISOTOPES: THEIR APPLICATION TO HUMANS AS TRACER STUDIES AND FOR THERAPEUTIC USE."
9:26 a.m. "COMPLICATED APPENDICITIS."
9:54 a.m. "PAROIDECTOMY."
10:16 a.m. "UTERINE CANCER."
10:38 a.m. "FRACTURES OF THE KNEE."
11:07 a.m. "PERIDURAL AND CAUDAL ANESTHESIA."

The Scientific . . .

H. F. FLANIGIN, JR., M.D.
Neurosurgical Section, Oklahoma State Department of Mental Health
Tulsa **Booth 1**

"Investigation and Surgical Treatment of Epilepsy in Oklahoma State Mental Hospitals"

A demonstration of EEG machine with abnormal recordings, photographic pictures of epileptogenic lesions of brain with areas resected and review of statistical results.

GEORGE L. WINN, M.D. and HERBERT KENT, M.D.
Oklahoma Allergy Clinic
Oklahoma City **Booth 2**

"Physical Medicine in Asthma and Emphysema"

A demonstration of pulmonary function testing by means of electronic apparatus, and breathing exercises for patients with asthma and emphysema.

OKLAHOMA STATE HEART ASSOCIATION
Oklahoma City **Booth 3**

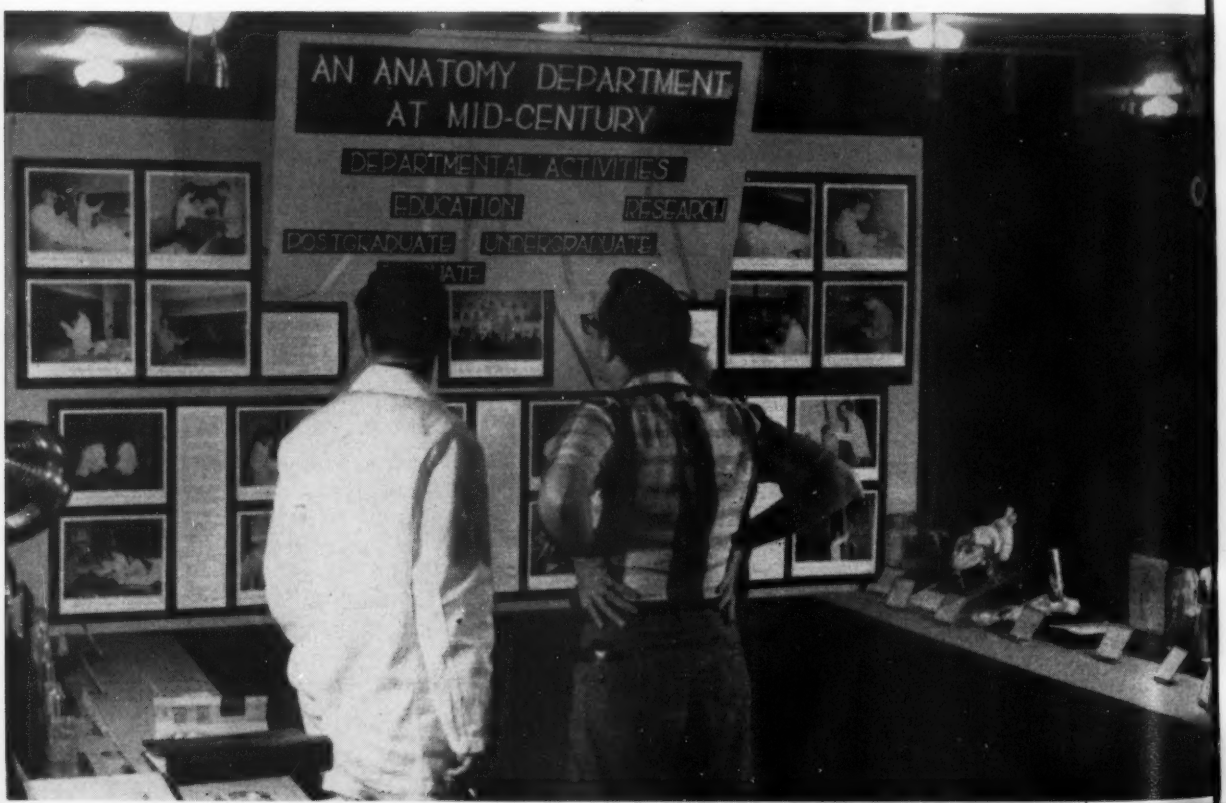
"Farmers With Heart Disease"

A review of energy requirements for farm work with suggestions for rehabilitation of farmers. Emphasis upon medical and sociological aspects of farmers with heart disease.

W. PAT FITE, JR., M.D.
Department of Plastic and Maxillofacial Surgery, Lakeland Medical Center
Muskogee **Booth 4**

"Hand Injuries"

Major and minor hand injuries are depicted by color photographs. Included are methods of treatment, operative procedures and follow-ups.



. . . and Educational Exhibits

GEORGE H. KIMBALL, M.D.
Oklahoma City **Booth 5**

"Plastic and Reconstructive Surgery"

Photographs and drawings of selected cases illustrating the effective use of plastic and reconstructive surgery in both male and female patients.

OKLAHOMA DIVISION, AMERICAN CANCER SOCIETY
Oklahoma City **Booth 6**

"A Cancer Service Program to Save Lives"

The services of the American Cancer Society to patients and physicians are explained and defined in this attractive exhibit.

ASSOCIATION OF AMERICAN PHYSICIANS AND SURGEONS
Chicago, Illinois **Booth 7**

"The Preservation of Quality Medical Care in America"

This exhibit includes useful literature regarding the preservation of quality of medical care and medical freedom for physicians and their patients as well as the maintenance of freedom for all Americans. A member of the AAPS will be present to discuss the material in the exhibit.

TULSA COUNTY RED CROSS BLOOD CENTER
Tulsa **Booth 8**

"A Blood Program for Tulsa County"

The activities of the Tulsa County Red Cross Blood Center, including its widespread fractionation program, are described in this attractive exhibit.

W. T. McCOLLUM, M.D., JOHN R. DANSTROM, M.D. and ALLEN GREER, M.D.
Mercy Hospital Heart Center
Oklahoma City **Booth 9**

"A Diagnostic Cardiovascular Laboratory"

A model diagnostic cardiovascular laboratory is described in photographs and charts with special reference to the galvonometer system, cine-radiology, biplane Schonader x-rays, and dye dilution curves.

OKLAHOMA POISON INFORMATION CENTER
Oklahoma City **Booth 10**

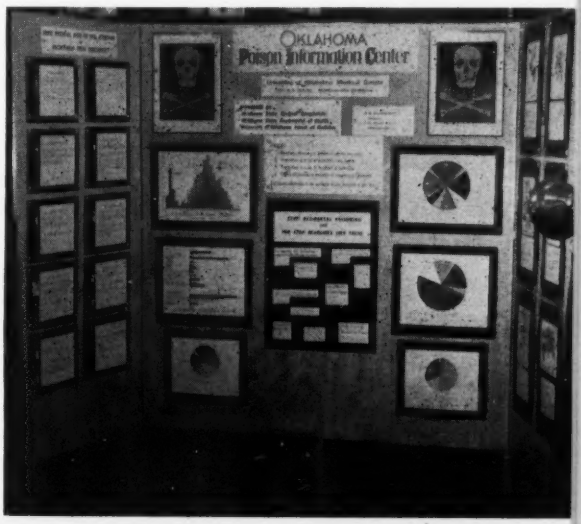
"Control of Accidental Poisoning"

Charts and diagrams show the incidence of accidental poisoning and the development of measures to prevent accidental poisoning.

THE JOURNAL OF THE OKLAHOMA STATE MEDICAL ASSOCIATION
Oklahoma City **Booth 11**

"Activities of the Journal of the Oklahoma State Medical Association"

A review of the editorial policies of *The Journal* of the Oklahoma State Medical Association.



DEPARTMENTS OF SURGERY AND PEDIATRICS, UNIVERSITY OF OKLAHOMA MEDICAL CENTER (Drs. Gilbert S. Campbell, Glen Caylor, William Richardson, Rainey Williams and David D. Snyder.)
Oklahoma City **Booth 12**

"Direct Vision Intracardiac Surgery"

A presentation of clinical cases in direct vision intracardiac surgery, including cardiac catheterization data, x-rays, diagrams of intracardiac defects, and diagrams of surgical correction of such defects, as well as perfusion data and demonstration of heart-lung apparatus.

The Social Calendar . . .

President's Inaugural Dinner - Dance

TUESDAY, APRIL 21, 1959

6:00 p.m. SOCIAL HOUR AND RECEPTION. Pompeian, French and Founders Rooms, The Mayo.

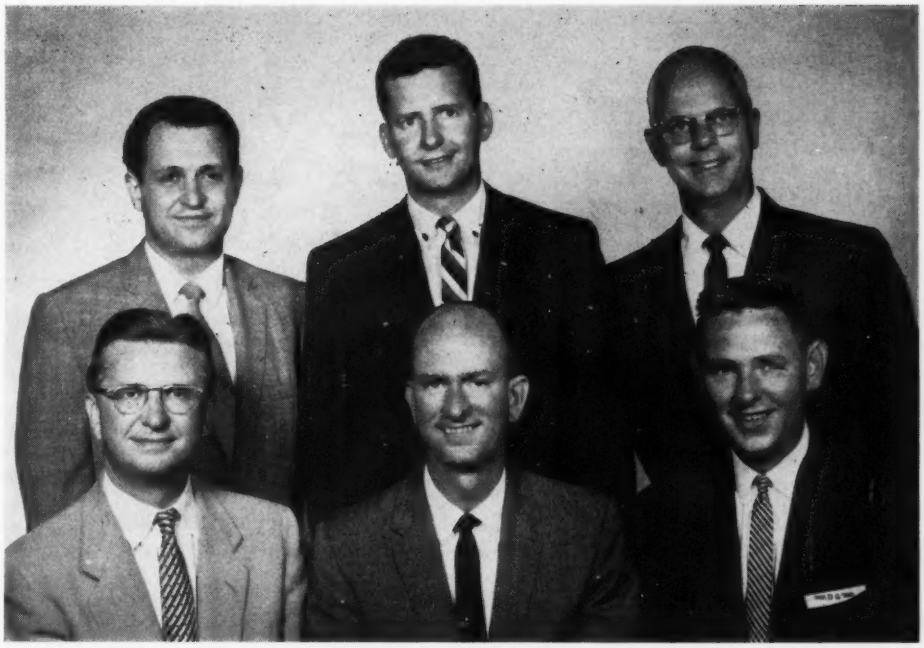
7:00 p.m. DINNER AND INAUGURAL CEREMONIES. Crystal Ballroom, The Mayo. Program: Musical entertainment by Dr. James Brown and His Greene County Medical Society Boys of Springfield, Missouri.

9:00 p.m. D A N C I N G to the Music of Charlie Barnet and His Orchestra. Cimarron Ballroom, 4th and Denver Streets. Floorshow entertainment featuring The Topnotchers.

CHARLIE BARNET

The exciting modern jazz rhythms of Charlie Barnet made him an overnight sensation in 1939. Today, two decades later, he is one of America's most popular (and handsome) maestros at leading ballrooms over the United States. His Mercury and Decca recordings are top sellers, and some of his jazz records are recognized classics. Barnet has been featured in many 20th Century-Fox movies and is frequently seen on nationwide television programs. His modern jazz and latin rhythms are interspersed with sweeter swing danceable tempos and dozens of ever-popular "oldies." Members of the Oklahoma State Medical Association will dance to Charlie Barnet and His Orchestra at the Cimarron Ballroom, just one block from The Mayo, from 9:00 p.m. to 1:00 a.m.

. . . Time to Relax



YOUR MEDICAL HIT PARADE

A special feature of the President's Inaugural Dinner Dance will be the appearance of Doctor James Brown and His Greene County Medical Society Boys of Springfield, Missouri, and their "Your Medical Hit Parade" presentation. This troupe of six practicing physicians has attracted nationwide attention with their hilarious medical parodies of popular song hits. Doctor Brown and his associates have appeared at dozens of medical meetings in the United States, including the American Medical Association.

THE TOPNOTCHERS

As an added extra attraction, the President's Inaugural Dinner Dance will feature a floorshow by The Topnotchers, a trio of zany musical comedians who have kept audiences in stitches at major night clubs across the nation. These Decca recording artists and performers on many network TV variety shows will appear at the Cimarron Ballroom to entertain at the intermission of the Charlie Barnet dance. The Topnotchers have recently set attendance records at The Last Frontier, Las Vegas, where audiences were delighted with their fresh comedy styles and sound musicianship.

TICKET INFORMATION

Tickets to the President's Inaugural Dinner Dance may be purchased in advance by writing: Tulsa County Medical Society, B9 Medical Arts Building, Tulsa 19. Tickets are $7.50 which includes the social hour, dinner, inaugural ceremonies, entertainment, floor show and dance. Make checks payable to "Oklahoma State Medical Association."

Attendance at the Dinner-Dance is limited to the capacity of the Crystal Ballroom. Tickets remaining after mail orders have been filled will be on sale at the Registration Desk.

ANNUAL GOLF TOURNAMENT

The Annual Golf Tournament and Dinner of the Oklahoma State Medical Association will be held on Wednesday, April 22, 1959, at the beautiful Oaks Country Club of Tulsa.

Golfing will begin at 12:00 Noon. The greens fee is $3.00 per person. A delicious buffet dinner will be served in the Clubhouse at 7:00 p.m. Many attractive and valuable merchandise prizes, contributed by Tulsa merchants, will be awarded to the winners.

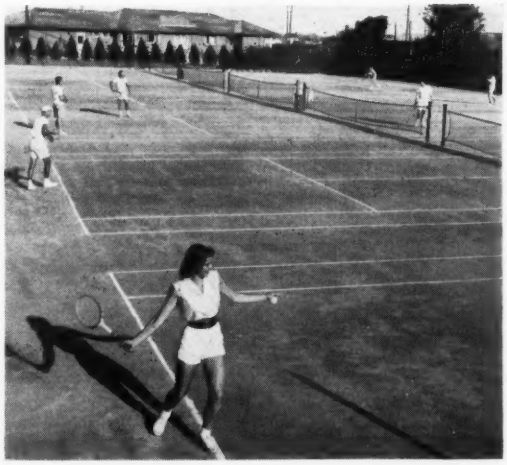
Oaks Country Club offers a fine golf course that will delight physician-golfers. Doctors will bring their own clubs, and locker room facilities will be furnished.

Tickets for the buffet dinner and social hour are $7.50 per person. Tickets should be purchased at the General Registration Desk at the time of registering for the meeting.

TENNIS TOURNAMENT

Excellent facilities will be available for those who wish to compete in the tennis tournament on Wednesday, April 22. Five rubico courts will be reserved for physicians at the Tulsa Tennis Club, 2801 South Columbia Place. Locker and clubroom facilities may be used, but contestants must furnish their own equipment.

Physicians wishing to participate are asked to write Dr. Walter E. Brown, Glass-Nelson Clinic, 2020 South Xanthus, Tulsa.



Forty-three Technical Exhibitors Scheduled

The Technical Exhibit at the 53rd Annual Meeting of the Oklahoma State Medical Association will feature displays by the following leading firms:

Booth No.	Exhibitor
1	Mid-Continent Surgical Supply Company and Merkel X-Ray Company.
2	Geigy Pharmaceuticals.
3	George A. Breon & Company.
4	G. D. Searle & Company.
5	Merrill Lynch, Pierce, Fenner & Smith, Inc.
6	Coca-Cola Bottling Company.
7	Mid-West Surgical Supply Company.
8	U. S. Vitamin Corporation.
9	Schering Corporation.
10	E. R. Squibb & Sons, Inc.
11	Greb X-Ray Company.
12	Ortho Products Company.
13	Sandoz Pharmaceuticals.
14	General Electric X-Ray Company.
15	St. Paul-Mercury Insurance Company.
16	Kay Pharmacal Company.
17	Lederle Laboratories.
18	W. B. Saunders Company.
19	Abbott Laboratories.
20	Eli Lilly & Company.
21	Carnation Company.
22	J. B. Roerig Company.
23	Endo Laboratories.
24	Melton-Myers Surgical Supply Company and The Melton Company.
25	Roche Laboratories.
26	The S. E. Massengill Company.
27	Mead Johnson & Company.
28	Rhinopto Company.
29	Parke, Davis & Company.
30	A. S. Aloe Company.
31	Wyeth Laboratories.
32	Medco Products Company.
33	Blue Cross-Blue Shield Plans of Oklahoma.
34	J. D. Young Company.
35	Oklahoma Physicians Supply Company.
36	Ciba Pharmaceutical Products.
37	Sealy Southwest, Inc.
38	R. J. Reynolds Tobacco Company.
39	A. H. Robins Company, Inc.
40	William S. Merrell Company.
41	R. P. Kincheloe X-Ray Company.
42	Knoll Pharmaceuticals.
43	Merck, Sharp & Dohme, Inc.

PLAN TO ATTEND 108th ANNUAL MEETING OF THE

AMERICAN MEDICAL ASSOCIATION

June 8-12, 1959, Atlantic City, New Jersey

Write Convention Services, American Medical Association, 535 N. Dearborn St., Chicago 10, Illinois for advance hotel and meeting registration information.

Oklahoma State Medical Association
1959 DELEGATES AND ALTERNATES

Society	Delegates	Alternates
ATOKA	NO ENTITLEMENT	
BRYAN	LeRoy Engles, M.D., Durant	B. B. Coker, M.D., Durant
COAL	NO ENTITLEMENT	
BECKHAM	W. T. Andreskowski, M.D., Elk City	Alexander Shadid, M.D., Elk City
BLAINE	NOT REPORTED	
CADDO	NOT REPORTED	
CANADIAN	NOT REPORTED	
CARTER	NOT REPORTED	
LOVE	NO ENTITLEMENT	
MARSHALL	NO ENTITLEMENT	
CHEROKEE	NOT REPORTED	
ADAIR	NO ENTITLEMENT	
CHOCTAW	John D. Jennings, M.D., Hugo	Henry D. Wolfe, M.D., Hugo
PUSHMATAHA	NO ENTITLEMENT	
CLEVELAND	NOT REPORTED	
McCLAIN	NOT REPORTED	
COMANCHE	William P. Jolly, M.D., Lawton	Lowell F. Thornton, M.D., Lawton
	Donald W. Angus, M.D., Lawton	Fred Fox, M.D., Lawton
COTTON	NO ENTITLEMENT	
CRAIG	NOT REPORTED	
OTTAWA	NOT REPORTED	
CREEK	NOT REPORTED	
CUSTER	NOT REPORTED	
EAST CENTRAL		
MUSKOGEE	William Weaver, M.D., Muskogee	Joe James, M.D., Muskogee
	Ed H. Fite, M.D., Muskogee	Halsell Fite, M.D., Muskogee
	Shade Neeley, M.D., Muskogee	Eugene Henry, M.D., Muskogee
WAGONER	NO ENTITLEMENT	
SEQUOYAH	NO ENTITLEMENT	
McINTOSH	NO ENTITLEMENT	
GARFIELD	Georget T. Ross, M.D., Enid	Paul H. Rempel, M.D., Enid
	John W. Williams, M.D., Enid	Wilson J. Buvinger, M.D., Enid
	Avery B. Wight, M.D., Enid	H. L. Steffen, M.D., Enid
KINGFISHER	Arthur W. Buswell, M.D., Hennessey	Frank C. Lattimore, M.D., Kingfisher
GARVIN	NOT REPORTED	
GRADY	L. E. Woods, M.D., Chickasha	J. J. Swan, M.D., Chickasha
	Seth D. Revere, M.D., Chickasha	R. D. Shelby, M.D., Chickasha
GRANT	NO ENTITLEMENT	
GREER	Fred W. Sellers, M.D., Mangum	Dwight D. Pierson, M.D., Mangum
HUGHES	H. V. Schaff, M.D., Holdenville	C. M. Bloss, M.D., Holdenville
SEMINOLE	D. D. Mosher, M.D., Seminole	Allen Bunch, M.D., Seminole
JACKSON	NOT REPORTED	
JEFFERSON	NOT REPORTED	
KAY	L. H. Becker, M.D., Blackwell	R. F. Morgan, M.D., Blackwell
	J. M. Busk, M.D., Ponca City	Harold Jones, M.D., Ponca City
NOBLE	Charles Martin, M.D., Perry	Arthur Brown, M.D., Perry
KIOWA	NOT REPORTED	
WASHITA	NOT REPORTED	
LeFLORE	W. W. Cotton, M.D., Poteau	C. S. Cunningham, M.D., Poteau
HASKELL	NO ENTITLEMENT	
LINCOLN	NOT REPORTED	
LOGAN	NOT REPORTED	
McCURTAIN	NOT REPORTED	
MURRAY	NOT REPORTED	

(Continued on Page 203)

Other Groups To Meet

AMERICAN COLLEGE OF SURGEONS

The Oklahoma Chapter of the American College of Surgeons will hold a dinner meeting on Monday, April 20, 1959, at 6:30 p.m. at the Tulsa Club. Wives are invited. The guest speaker will be Dr. Willard H. Parsons of Vicksburg, Mississippi, member of the Board of Regents of the American College of Surgeons. Tickets will be on sale at the General Registration Desk in the Main Lobby and should be purchased at time of registration for the annual meeting. Each member of the College will receive an advance reservation form by mail and is urged to make reservations for this event. For information contact Doctor Ralph A. McGill, 210 Utica Square Medical Center, Tulsa.

TULSA OB-GYN SOCIETY

The Tulsa Obstetrical & Gynecological Society has scheduled a special convention meeting on Sunday, April 19, 1959, at 6:30 p.m. in the Four Seasons Room of Western Village Motel. Doctor Isadore Dyer, Professor of Obstetrics, Tulane University School of Medicine, New Orleans, Louisiana, will be the principal guest speaker.

OKLAHOMA UROLOGICAL SOCIETY

The Oklahoma Urological Society will hold a one-day seminar on Saturday, April 18, 1959, in the Metropolitan Room of The Mayo. Doctor Charles B. Huggins, Professor of Urology at the University of Chicago, Chicago, Illinois, will be the principal guest speaker. Registration opens at 8:30 a.m.

OKLAHOMA RADIOLOGICAL SOCIETY

The Oklahoma Radiological Society will meet on Sunday, April 19, 1959, in the Emerald Room of The Mayo. The time will be announced later. Doctor Don C. Weir, Associate Professor of Radiology, St. Louis University School of Medicine, St. Louis, Missouri, will be the guest speaker.

OKLAHOMA ORTHOPEDIC SOCIETY

The Oklahoma Orthopedic Society will hold its Spring meeting on Sunday, April 19, 1959, at 2:00 p.m. at St. John's Hospital of Tulsa. Doctor Michael L. Mason, Professor of Plastic Surgery at Northwestern University School of Medicine, Chicago, Illinois, will be the principal guest speaker.

OKLAHOMA MEDICAL ASSISTANTS SOCIETY

The Oklahoma Medical Assistants Society will meet April 17-19, 1959, at Hotel Tulsa. Guest speakers will include Doctor Gunnar Gundersen of LaCrosse, Wisconsin, President of the American Medical Association; Doctor Leonard P. Eliel, Director of Research, Oklahoma Medical Research Foundation, Oklahoma City; and Mr. James E. Bryan, Staff Consultant to the Blue Cross-Blue Shield Commission, Chicago, Illinois. A delightful program of entertainment has also been arranged, featuring the Annual Dinner Dance on Saturday, April 18th. Bob Alspaugh and His Orchestra will provide the music.

For the Ladies . . .

Mrs. Iron Hawthorne Nelson
Tulsa
State President

Mrs. Clifford M. Bassett Cushing
President-Elect

Mrs. E. Arthur Underwood
Vancouver, Washington
President
Woman's Auxiliary
American Medical Association

Mrs. George W. Owen
Jackson, Mississippi
President
Woman's Auxiliary
Southern Medical Association

WOMAN'S AUXILIARY

to the

OKLAHOMA STATE MEDICAL ASOCIATION

THE MAYO TULSA, OKLAHOMA

SUNDAY, APRIL 19, 1959

All members and visiting physicians' wives are welcome to all activities.

1:00-5:00 p.m.—REGISTRATION AND INFORMATION—Founders' Room, Mezzanine, The Mayo

2:30-4:30 p.m.—TEA, Terrace Room, The Mayo
Hostess: Tulsa County Auxiliary
Honoring Mrs. E. Arthur Underwood, President Auxiliary to the American Medical Association; Mrs. George W. Owen, President, Southern Medical Association Auxiliary; past presidents, state officers, and the wives of guest speakers.

5:30 p.m.—EXECUTIVE BOARD MEETING
Mrs. Iron H. Nelson, presiding
Metropolitan Room, Mezzanine;
Dinner, Terrace Room

MONDAY, APRIL 20, 1959

THEME: Safeguard Today's Health For Tomorrow

8:30 a.m.—PAST PRESIDENTS' BREAKFAST, Studio Room, The Mayo. Hostess, Mrs. Frank L. Flack.

9:00 a.m.—REGISTRATION, Founders' Room, Mezzanine, The Mayo.
Coffee and rolls will be served.

9:45 a.m.—GENERAL MEETING, Emerald Room, The Mayo.

CALL TO ORDER: Mrs. Iron H. Nelson.

INVOCATION: Mrs. Alfred T. Baker, Durant.

PLEDGE: Mrs. Clifford M. Bassett—
"I pledge my loyalty and devotion to the Woman's Auxiliary to the American Medical Association. I will support its activities, protect its reputation and ever sustain its high ideals."

WELCOME: Mrs. Logan Spann, President, Tulsa County Medical Auxiliary.

GREETINGS: Doctor E. C. Mohler, President, Oklahoma State Medical Association.

INTRODUCTIONS: Mrs. E. Arthur Underwood, President, Woman's Auxiliary, American Medical Association.
Mrs. George W. Owen, President, Southern Medical Auxiliary.

ROLL CALL BY COUNTIES.

READING AND ADOPTION OF THE MINUTES.

TREASURER'S REPORT: Mrs. Virgil Ray Forester.

REPORT OF THE CREDENTIALS COMMITTEE: Mrs. W. A. Huber.

BUSINESS:
Bylaws—Mrs. Clinton F. Gallaher,
Finance—Mrs. J. A. Cunningham,
Nominating—Mrs. C. M. Bassett,
Convention—Mrs. G. H. Miller.

MEMORIAL SERVICE: Mrs. James Stevenson.

1:00 p.m.—LUNCHEON AND FASHION SHOW.
Beautiful Ramada Inn, 51st and Yale; Fashions by Nan Pendleton.

. . . A Full Schedule

TUESDAY, APRIL 21, 1959

9:00 a.m.—REGISTRATION, Founders' Room, Mezzanine, The Mayo.
Coffee and Rolls will be served.

9:45 a.m.—GENERAL MEETING, Emerald Room, Mezzanine, The Mayo.

CALL TO ORDER: Mrs. Iron H. Nelson.

INVOCATION: Mrs. E. C. Mohler.

PLEDGE: Mrs. Wm. Patton Fite, Sr.

GREETINGS: Dr. Alfred T. Baker, President-Elect, Oklahoma State Medical Association.

INTRODUCTIONS: Mrs. E. Arthur Underwood, President, Woman's Auxiliary, American Medical Association.
Mrs. George W. Owen, President, Auxiliary, Southern Medical Association.

ROLL CALL BY COUNTIES: Mrs. Virgil Ray Forester.

REPORT: Credentials Committee—Mrs. Huber.

REPORTS: County Presidents
State Committee Chairmen

OLD BUSINESS.

NEW BUSINESS.
Budget: Mrs. John Cunningham
Election of Officers

INSTALLATION OF OFFICERS.

ANNOUNCEMENTS: Mrs. George H. Miller.

ADJOURNMENT.

1:00 p.m.—LUNCHEON, Founders' Room, Mezzanine, The Mayo.
Post Convention School of Instruction, Mrs. C. M. Bassett, President-elect.

PRESIDENT'S INAUGURAL DINNER-DANCE, OKLAHOMA STATE MEDICAL ASSOCIATION.

6:00 p.m.—Social Hour.

7:00 p.m.—Dinner, Crystal Ballroom, The Mayo.
Program—"Your Medical Hit Parade"
Dr. James Brown and the Greene County Medical Society Boys, Springfield, Missouri.

9:00 p.m.—DANCE.
Cimarron Ballroom, 221 W. 4th.
Charlie Barnet and his Orchestra.

CONVENTION COMMITTEES

Mrs. George H. Miller, Chairman

Registration	Mrs. John Blankenship
Credentials	Mrs. Walter Huber
Courtesy	Mrs. Vance Lucas
Hospitality	Mrs. Harlan Thomas
Hobby Show	Mrs. Wm. R. R. Loney
Tea	Mrs. Robert Anderson
Luncheon	Mrs. Samuel R. Turner
Fashion Show	Mrs. Robt. W. Spencer
Past Presidents	Mrs. Frank L. Flack
Publicity	Mrs. Marshall O. Hart
	Mrs. L. E. Thompson, Jr.
Tickets	Mrs. C. G. Stuard

HOSTESS COUNTIES

Tulsa, Kay-Noble, Washington-Nowata, Garfield-Kingfisher, and Okmulgee.

Oklahoma State Medical Assistants Society

FRIDAY, APRIL 17, 1959

Reception for out-of-town guests——Hotel Tulsa

SATURDAY, APRIL 18—Morning Session

Registration

Call to Order——Marge Petty, Ada, President, O.S.M.A.S.

Invocation——J. C. Bunn, Th.D., Sequoyah Hills Baptist Church, Tulsa

Official Welcome——Mr. James Maxwell, Mayor, City of Tulsa

Response——Lucille Swaringer, Bartlesville, President, National Association Medical Assistants

Speaker——Mr. James Bryan, Consultant, Blue Shield Plan Commission

Magic Suitcase——Carol Childress
(Sponsored by Oklahoma Petroleum Council)
Luncheon

Afternoon Session

Roll Call by Counties——Presentation of Nomination Committee Slate

Speaker——Leonard Eliel, M.D., Medical Director, Oklahoma Medical Research Foundation

Announcement of Election Results

Evening Session

Dinner

Welcome——Katie Brown, Tulsa, Convention Chairman

Response

Introductions

Cartoonist—Rex Morgan, M.D.——Mr. Marvin Bradley

Dance——Bob Alspaugh, Tulsa

SUNDAY. APRIL 19—Morning Session

Invocation

Address——Gunnar Gunderson, M.D., President, American Medical Association

"The Robe"——Leo J. Starry, M.D., Oklahoma City

Seminar——David Steen
University of Oklahoma

Luncheon——Speaker — Secret!!
(Sponsored by Druggists of Tulsa)

Afternoon Session

Address——Neda Chadsey, Bartlesville

Presentation of Gifts

Award of Achievement Trophy to Winning County

Program Chairman: Mary Ethel Wright
305 Braniff Building
Tulsa, Oklahoma

Registration Fee: $8.50—Hotel Tulsa

Rooms: Single, $4.75 and up; Double, $4.50 and up.

Dinner and Dance Guest Tickets: $5.00.

Dance Guest Tickets: $1.50.

THE CITATION

MEDICO-LEGAL BRIEFS

Prepared by the Law Department of the American Medical Association

LIABILITY OF HOSPITAL FOR ADMINISTRATION OF ACCIDENTAL OVERDOSE OF DRUG—A $30,000 Federal suit against Chicago's St. Luke's Hospital in connection with a death from an accidental overdose of drugs, was settled out of court for $22,500 on December 31, 1958. The suit had been filed on November 5 in behalf of the estate of George A. Schwab, Jr., 45, of Brentwood, Tennessee, who died on July 18 after a student nurse misread the dram symbol in a prescription as an ounce symbol and mistakenly administered three ounces of paraldehyde instead of the prescribed three drams.

OSTEOPATHY—The AMA's House of Delegates at the Clinical Session in December, 1958, requested the Judicial Council to review past pronouncements of the House on osteopathy and the status of the laws of the various states in this regard. The Council was asked to present its report and recommendations at the June 1959 Annual Meeting.

FRENCH COURT DENIES MALPRACTICE CLAIM OF AN AMERICAN—A French civil court ruled against an American plaintiff, Mrs. Gita L. Kassel, who sought 50-million francs damages ($119,000) from Dr. Jean Voisin, Paris plastic surgeon. Allegations were that Mrs. Kassel, age 56, asked Voisin to iron out certain facial wrinkles, smooth eye pouches, and give her bosom a more youthful line. Results, she said were fine except for the latter procedure. The court rules that ". . . at a certain age, one should not ask the impossible," found for Dr. Voisin and assessed the costs against Mrs. Kassel.

MEDICAL PROFESSIONAL LIABILITY EXPERIENCE IN ENGLAND—Information has been obtained from the Medical Protection Society, Ltd., one of the two large medical professional liability defense groups in England, which indicates that as high as 70% of all medical professional liability suits in England over the past ten years are related to treatment received in the hospital.

Under English law the hospital is held vicariously liable for the negligence of all members of its medical staff of whatever status. The doctor himself remains personally liable for his own negligent acts, and thus the patient is entitled to sue either the hospital or the doctor or both. The recent trend has been for patients to sue the hospital only. The hospital may bring an action of contribution which may amount to complete indemnity against the particular member of the medical staff involved in the litigation. The following is an analysis of the annual reports of the Medical Protection Society, Ltd., for the past ten years:

	Total Expenses of Defending and Conducting Cases of Members	Costs and Damages Paid on Behalf of Members
1946	£* 4,225	£* 11,313
1947	6,057	10,217
1948	6,417	11,179
1949	6,011	18,573
1950	9,607	14,613
1951	7,809	20,157
1952	12,356	22,864
1953	9,881	28,088
1954	10,482	21,371
1955	11,703	32,316
1956	16,311	40,854

*Figures are in pounds sterling.

Further information on the preceding cases may be obtained from the Law Department, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

LEDERLE

Tetracycline with Citric Acid *LEDERLE*

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York Lederle

Medical News

Air-Medics Association To Meet in San Antonio

The Twelfth Annual Meeting of the Air-Medics Association will be held April 18, 19 and 20, 1959 in San Antonio, Texas, with headquarters at the Hotel Menger. The organization, whose members are principally from the southwest district of the United States, is specifically interested in the promotion of air safety. A detailed program for the three-day meeting follows:

SATURDAY, April 18th

3:00 p.m. to 6:00 p.m. Registration and "Get-Together"

7:30 p.m. Dinner Party, MEXICAN STYLE—CASA RIO, San Antonio River, 1½ blocks from Menger Hotel. Dinner to be served on boats cruising on the river.

SUNDAY, April 19th

9:00 a.m. Registration, Hotel Menger.

10:00 a.m. Open Session.
Invocation, P. W. Malone, M.D., Big Spring, Texas.
Welcome Address.

10:30 a.m. Informal Discussion, Medical Examiner Problems, W. A. Ostendorf, Regional Flight Surgeon, Presiding.

12:00 noon Recess

2:00 p.m. Opening Session.
Dudley P. Laugenour, M.D., Dallas, Texas, Moderator.
Introduction of Guests and Visitors.

2:30 p.m. President's Address.
Richard Henry Harrison, M.D., Bryan, Texas.

3:00 p.m. Reminiscences, Twenty-five years as Medical Examiner for Civil Aviation, Howard A. Dishongh, M.D., Little Rock, Arkansas.

3:30 p.m. Legal Problems Associated with Certification of Airmen, Mr. Charles A. Smith, Deputy Regional Attorney, Fort Worth, Texas, Air Traffic Control.

4:00 p.m. Mr. Paul H. Boatman, Fort Worth, Texas, Chief, Air Traffic Control Division.

4:45 p.m. Executive Council Meeting.

6:00 p.m. Cocktail Party, Menger Hotel.

7:00 p.m. President's Banquet, Menger Hotel.

MONDAY, April 20th

10:00 a.m. Cardiovascular Disease in Relation to Safety in Aviation, John E. Smith, M.D., Washington, D.C.

10:30 a.m. Toxicology of Chemicals Used in Agricultural Aviation, Mr. Joseph J. Werbke, Agricultural Specialist, Fort Worth, Texas.

11:00 a.m. Treatment of Poisoning of Agricultural Chemicals, John S. Minnett, M.D., Dallas, Texas.

11:30 a.m. The Federal Aviation Agency, Federal Aviation Act of 1958, Mr. John S. Hunter, Regional Attorney, Fort Worth, Texas.

12:15 p.m. Luncheon, Menger Hotel

1:15 p.m. Business Meeting, Election of Officers.

1:45 p.m. F.A.A. Forum, Round Table Discussion, W. A. Ostendorf, M.D., Regional Flight Surgeon, Presiding.

4:30 p.m. Presentation of Officers for Following Year.

Kansas Traineeship in Cardiology Announced

A nine-month traineeship in Cardiology, planned for the practicing physician, is announced by the Cardiovascular Laboratories, University of Kansas Medical Center, Kansas City, Kansas. The program begins September 15, 1959 and is terminated June 15, 1960.

Curriculum includes formal instruction and practical experience in all areas of modern cardiovascular diagnosis and therapy. Enrollment is limited and tuition is $600.00.

For further information and application form, write: Department of Postgraduate Medical Education, University of Kansas School of Medicine, Kansas City 12, Kansas.

1959 Forand Bill Introduced

The 1959 version of the proposal to use the social security system to provide hospitalization and surgical services for those eligible for OASI benefits was introduced in the House by Rep. Aime Forand (D., R.I.) on February 18. The bill (H.R. 4700) differs with his 1957 bill in several points. They include permitting surgical services to be performed by other than board certified members. To finance the program, he would increase social security taxes, above increases already planned, by ¼ of 1% for both employee and employer and ⅜ of 1% for the self-employed, starting in 1960.

> In a statement placed in the Congressional Record, Mr. Forand noted the Department of HEW report on various means of financing medical care for the retired aged is due to be sent the committee in March "when I hope the Committee may be ready to commence hearings." There has been no indication from Chairman Mills of the House Ways and Means Committee on a date for hearings.

Mr. Forand conceded that among the strongest backers of his original bill, "there are some who question the feasibility of including surgical benefits at this time. This is one of the matters which the committee will want to weigh as it hears testimony." He said he intends to explore the possibility of (1) paying for diagnostic services, such as X-rays and laboratory tests, on an outpatient basis, and (2) including benefits for home nursing care through responsible agencies as visiting nurses association, hospitals or local health departments.

He commented further: "The American Hospital Association has recognized the need for some type of federal action and has been exploring alternatives . . . The American Medical Association has also acknowledged the need for vigorous action along new lines and urged its member societies to explore and support private programs that will help to avoid federal legislation."

AAPS Plans Fort Worth Meeting

The Association of American Physicians and Surgeons, a national organization representing the nation's physicians in medical economics, public relations, legislation and freedom, will hold its 16th Annual Meeting of the Assembly and Delegates at Fort Worth, Texas on April 2, 3 and 4, 1959.

Among the laymen and physicians who will appear on the program will be: C. Hamilton Moses, Little Rock, Arkansas, President of the Arkansas Power and Light Company; Kent Courtney, New Orleans, Louisiana, publisher of *The Independent American;* Howard A. Nelson, M.D., Past President of the Mississippi State Medical Association; Robert S. Green, M.D., Cincinnati, Ohio; Charles Tansill, Washington, D.C., author of "Back Door to War;" Howard O. Smith, M.D., Marlin, Texas, President of the Texas Medical Association; and Robert D. Moreton, Fort Worth, President of the Tarrant County Medical Society.

Also appearing on the program will be the Reverend George Taggart, a Presbyterian Minister from Anderson, Indiana.

All physicians who are members of their county medical societies are eligible to attend the sessions.

Search for Medical Book

An attempt to find a copy of a medical book for the author, who lost his copies to Communists in Korea several years ago, has been launched by a Muskogee woman.

Title of the book is *Surgical Diagnosis.* The paper bound volume is approximately 6 x 9 inches. Author of the book is A. G. Fletcher, M.D., of Seoul, Korea.

Original price of the book was $3.00 and Doctor Fletcher will gladly buy a copy from anyone who has one available. Write to Mrs. Lera C. Larson, 215 South Seventh, Muskogee, Oklahoma.

Coming Meetings

UNIVERSITY OF OKLAHOMA MEDICAL CENTER
POSTGRADUATE PROGRAM
Oklahoma City, Oklahoma
Individual Postgraduate Courses

ORTHOPEDIC SYMPOSIUM—April 3 and 4

Treatment of Athletic Injuries.
Sponsored by the Regional Committee on Trauma of the American College of Surgeons.

FIFTH ANNUAL COMBINED SURGERY, RADIOLOGY, PATHOLOGY SYMPOSIUM—May 8 and 9

Diagnosis and Treatment of Thyroid Diseases.
Sponsored by the Oklahoma Association of Pathologists, Oklahoma Association of Radiologists and Oklahoma Chapter of American College of Surgeons. Guest participants of national reputation in surgery, radiology and pathology will participate.

OKLAHOMA ASSOCIATION OF HOUSE STAFF PHYSICIANS—May 22

Two guest lecturers and presentation of original papers by members of the various house staffs will highlight this program. Participating hospitals are: Hillcrest Medical Center, Tulsa, St. John's, Tulsa; McBride, Mercy, St. Anthony, University, Veterans Administration, Wesley, Oklahoma City; Central State Hospital, Norman.

SERIAL POSTGRADUATE COURSE
Postgraduate Division
UNIVERSITY OF OKLAHOMA MEDICAL CENTER
Oklahoma City, Oklahoma
1958-1959

April 8—Anesthesiology—Anesthesia for the Part-Time Anesthetist.

May 13 — Pediatrics — Antimicrobial Therapy and Treatment of Infectious Disease in Childhood.

June 10—Surgery—Herniae.

Designed so physicians may attend four hours of formal instruction in the above fields while spending only one-half day from their office, this series is approved for credit by the Oklahoma Academy of General Practice. Time will be 3:30 to 8:30 p.m. on the Second Wednesday of each month, September through June. Registration is $3.00 per session or $25.00 for the entire series.

Further information concerning the individual and serial courses may be obtained from the Office of Postgraduate Education, University of Oklahoma School of Medicine, 801 N. E. 13th Street, Oklahoma City, Oklahoma.

INTERNATIONAL ACADEMY OF PROCTOLOGY
APRIL 5-9, 1959
The Plaza **New York, New York**

The Plaza Hotel, New York, will be the site of the Eleventh Annual Convention of the International Academy of Proctology, to be held April 5-9. Special emphasis will be placed on anal and rectal panel presentations and on newer treatment methods.

Non-members as well as members are invited to attend the meeting and the annual dinner-dance. There is no registration fee.

SOUTHWESTERN SURGICAL CONGRESS
March 30-31 — April 1-2 **Brown Palace Hotel**
Denver, Colorado

The Annual Southwestern Surgical Congress will meet March 30-31, April 1-2, 1959 at the Brown Palace Hotel, Denver, Colorado. Detailed information is available by writing to the central office Southwestern Surgical Congress, 813 Medical Arts Building, Oklahoma City, Oklahoma.

AMERICAN COLLEGE OF OBSTETRICIANS and GYNECOLOGISTS
April 6-8, 1959 **Convention Hall**
Atlantic City

The American College of Obstetricians and Gynecologists will hold its annual meeting in Atlantic City, April 6-8, 1959, with general sessions in Convention Hall.

For further information, write to Mr. Donald F. Richardson, Executive Secretary, The American College of Obstetricians and Gynecologists, P.O. Box 749, Chicago 90, Illinois.

AMERICAN GOITER ASSOCIATION
April 30, May 1, and 2 **Drake Hotel**
Chicago, Illinois

The program for the 1959 meeting of the American Goiter Association will consist of papers dealing with the thyroid gland, its physiology, pharmacology, pathology and therapy.

Further information is available by writing to John C. McClintock, M.D., Secretary, 149½ Washington Avenue, Albany 10, New York.

13th ANNUAL
ROCKY MOUNTAIN CANCER CONFERENCE
July 22-23, 1959 **Brown Palace Hotel**
Denver, Colorado

The Rocky Mountain Cancer Conference will be held at the air conditioned Brown Palace Hotel in Denver, July 22 and 23, 1959. Further information concerning the program and reservations may be obtained from Rocky Mountain Cancer Conference, 835 Republic Building, Denver 2, Colorado.

Organization News

Loan Fund Established By Garfield-Kingfisher Society

Members of the Garfield-Kingfisher County Medical Society recently approved the establishment of a student loan fund and simultaneously honored an Enid physician by affixing his name to the project. The R. C. Baker Student Loan Foundation was designed to not only serve worthy medical students, but also has the dual purpose of paying tribute to Doctor Baker for the meritorious service he has rendered to his society for many years.

The action came as a result of general interest in the creation of such a fund. A special study committee reported favorably on the project and the program was officially placed into effect.

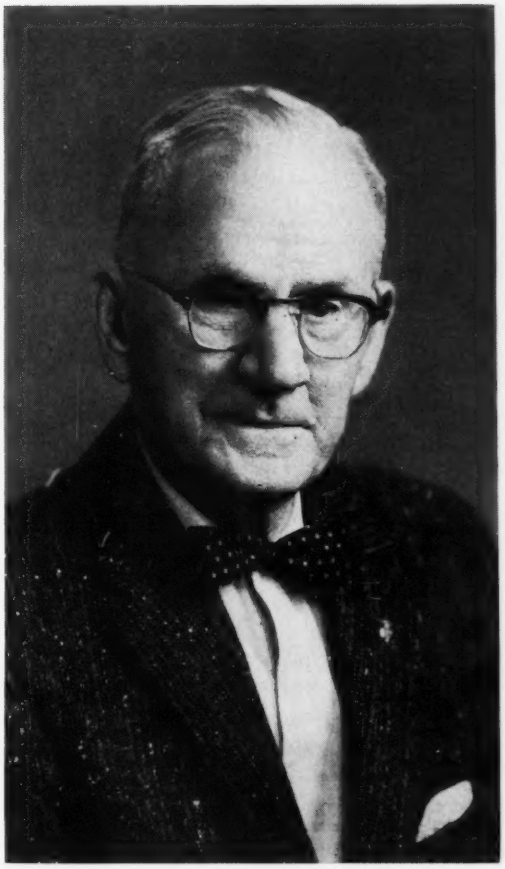
Rules and regulations governing the administration of the program were approved in the following form:

(1) As specified in the enabling Resolution adopted by the Garfield-Kingfisher County Medical Society October 22, 1958 this Foundation shall be known as THE R. C. BAKER STUDENT LOAN FOUNDATION.

(2) Its purpose shall be to lend financial assistance on a loan basis to worthy medical students to enable them to continue their college course in medicine.

(3) The Foundation shall be administered by the Board of Directors of the Garfield-Kingfisher County Medical Society.

(4) The Secretary-Treasurer of the Garfield-Kingfisher County Medical Society shall serve as Executive Secretary of the Foundation, collect all monies due the Foundation and, when authorized by the Board of Directors, sign all checks drawn on the Foundation fund.



R. C. BAKER, M.D.

(5) Loans shall be made only to students in their junior or senior years in college at an interest rate of four per cent (4%) per annum.

(6) The terms of re-payment of the loan shall be at the discretion of the Board of Directors and based on the applicant's ability to pay.

(7) Approval of applications for loans shall be made by a majority of the Board of Directors present and voting.

(8) The Board shall examine carefully

the background of the applicant, his moral reputation, his financial integrity and, if deemed necessary it shall contact, by letter, the Dean or President of his school to ascertain the applicant's general behavior in school, his attitude toward study, and his scholastic standing.

(9) The Board of Directors shall make an annual report to the Society of their stewardship.

Doctor Baker's history of service to his county society and organized medicine has been one of unselfish dedication. He has served as Secretary-Treasurer of the local group for the past eleven years and has edited the *Bulletin* for twenty-five years. Journalism experience was gathered while on active duty with the 45th Division during World War II. Although serving primarily as a medical officer, he helped organize the *45th Division News* and served as a member of the original staff.

In 1953, Doctor Baker was honored by the Oklahoma State Medical Association when he was made an Honorary Member. Two years later, the O.S.M.A. paid tribute to his half-century of service by awarding him a 50 year pin.

Health and Accident Program Gains Momentum

The installation of the new official Oklahoma State Medical Association Disability Insurance Program is progressing well, the North American Accident Insurance Company, the underwriting company, reports.

At the halfway mark in the installation campaign, 518 applications have been received. Of this total number of applications 412 members have transferred from the former Oklahoma State Medical Association endorsed program; 106 applications have been received from members not previously insured.

It should be noted by all members that the deadline for enrollment during the charter enrollment period is April 15th.

The new program was designed by the Insurance Committee of the Oklahoma State Medical Association, Ralph Smith, M.D., Chairman. The enrollment campaign and future operations of the program will be supervised by the Insurance Committee.

North American reports that most members are enrolling in Plan 1 and are buying the additional daily hospital indemnity, which provides $15.00 per day.

Plan 1 provides lifetime accident coverage, five-year illness coverage with benefits beginning on the first day on accidents and on the eighth day on illness.

Members interested are encouraged to enroll before the deadline in order to take advantage of the outstanding enrollment privileges.

For additional information, contact your Oklahoma State Medical Association office or the North American office at 2901 Classen Boulevard, Oklahoma City.

"Americans Abroad Program" Selects Oklahoman

Ralph W. Rucker, son of the late Ralph W. Rucker, M.D., Bartlesville physician, will be among 23 United States High School juniors who will attend school in New Zealand for five months under the sponsorship of the Americans Abroad Program of the American Field Service.

The American Field Service, sponsored by the Rotary Club International, is the largest secondary school age exchange program in the United States. Some 1170 students from other countries are living with American families and studying in American high schools this year. Schools participating in this program are permitted to submit application for two candidates to go to New Zealand on scholarship for a five month term.

The American Field Service students will be placed in the 5th Form or the Lower 6th Form, where their classmates will be between 15 and 17 years of age and which are approximately equivalent to 11th and 12th grades in the United States high schools.

CCC Transfer Prompts Council Meeting

The Introduction of Senate Bill 20 at the 27th Oklahoma Legislature has prompted a special session of the O.S.M.A.'s Council. Ramifications and resultant disagreement over the propriety of the provisions of this bill made it necessary for President Mohler to seek official and representative opinion from the policy making body.

> Late developments in the status of Senate Bill 20 are as follows:
>
> Within a few days after the Council meeting, the bill was approved by the Senate Social Welfare Committee and passed by the Senate. It is now in the Social Welfare Committee of the House, where one public hearing has been held.
>
> Some of the OSMA Amendments were accepted by the Senate, others were not.

Senate Bill 20 has been presented as a bill designed to relieve the taxpayers from additional tax burdens by abolishing the present Crippled Children's Commission and transferring its functions and properties to the Department of Public Welfare, thereby taking advantage of state assistance funds earmarked for the Welfare Department's use.

Sub-Committee Formed

When the bill came to the attention of the O.S.M.A., it was discussed at some length by the Public Policy Committee. In view of the complexities of the issues, a special sub-committee was formed and assigned the task of developing recommendations.

The sub-committee asked for written analysis of the bill from interested agencies and organizations in order that all sides could be heard before a decision was reached. Those groups and individuals responding to the request were: the Oklahoma Hospital Association (favoring the bill); the Oklahoma Society for Crippled Children (opposing the bill); and the Director of the Crippled Children's Commission (opposing the bill).

On the basis of the arguments it heard, the sub-committee prepared a written statement which was subsequently approved by the Executive Committee of the Council and presented to the Social Welfare Committee of the Senate. In brief, the report stated that it seemed apparent that there were several ills in the laws governing the operation of the CCC, only one of which was inadequate financing. For that reason, it was recommended that the bill be tabled pending more thorough study and that, in the meantime, funds be transferred from the DPW to the CCC in order to assure adequate financing.

Council Acts

Since this stand met with varying degrees of support and opposition, both in and out of medical circles, Doctor Mohler ask the Council to review the association's position.

Prior to the four-hour Council meeting, the full Public Policy Committee met to re-evaluate the position taken by the sub-committee. At this time, it was decided that the association should not become part of a controversy between two governmental agencies and the hospital group, particularly since physicians are interested only in the quality of care and not governed by a financial interest in the program.

They did feel, however, that certain amendments should be incorporated into the bill to safeguard continued high quality care. In a final action, they adopted a report to the Council which: expressed a need for further study; recommended that the association neither approve nor disapprove of the transfer; and suggested certain amendments that would make the present proposal more palatable.

At the Council meeting, pro and con presentations were heard from Mr. L. E. Rader, Director of the Department of Public Welfare, Mr. Ira McConnell, Director of the Commission for Crippled Children and Mr. Dick Clark, Director of the Oklahoma Society for Crippled Children. In addition, the Public Policy Committee was represented by J. R. Stacy, M.D., Chairman.

After lengthy discussion and questioning of the participants, the Council took the following action, as abstracted from the official minutes: (bold face indicates changed wording).

O.S.M.A. COUNCIL MEETING

March 1, 1959

". . . Doctor M. O. Hart moved that we accept the recommendation of the Public Policy Committee of the Oklahoma State Medical Association in regard to Senate Bill 20, which was as follows:

The Public Policy Committee recommends that Senate Bill 20 be subjected to a comprehensive study of the philosophical and practical aspects of the maintenance of a corrective medical program for children.

The Public Policy Committee further recommends that Senate Bill 20 be amended in the following manner:

SECTION 2—(Sub-Section "B")—to read as follows: All **written bona fide** contracts, leases and such other **written** agreements as may have been entered into by the Oklahoma Commission for Crippled Children, and such responsibilities as are in effect on the effective date of this Act, shall be assumed by and become binding upon the Oklahoma Public Welfare Commission and the State Department of Public Welfare.

SECTION 3—(Sub-Section "b")—to read as follows: The term "child" when used in this Act shall mean any person **unwed** under twenty-one (21) years of age, whose parents, or parent or legal guardian is financially unable to provide essential medical, dental, hospital, nursing, or convalescent home care.

SECTION 3—(Sub-Section "d")—to read as follows: The term "Committee" when used in this Act shall mean the Professional Advisory Committee, **or other Committees authorized by the Commission**.

SECTION 3—(Add Sub-Section "E")—which is as follows: **The term "Chairman" when used in this Act shall mean the Chairman of the Professional Advisory Committee.**

SECTION 4—COMMISSION AS AGENT OF THE STATE. The Commission is hereby designated as the agency of the State responsible for and having authority for the administration and operation of the program of the services for children as stated in Section 5 of this Act, and to supervise generally the administration of any services related to this program but not administered directly under the Commission. The purposes of this program shall include the development, extension and improvement of services for locating such children and for providing medical, **dental,** corrective and other services and care, and facilities for diagnosis, hospitalization, treatment and after care.

SECTION 5—(Sub-Section "b")—to read as follows: The Commission shall receive and expend in accordance with such plan all **necessary** funds made available to it by the United States Government, by the State or its political sub-divisions, or by any other sources for such purposes.

SECTION 5—(Sub-Section "d")—to read as follows: The Commission shall **establish** and maintain such methods of administration, including those necessary to establish and maintain a merit system of personnel administration, as are necessary for effective and efficient operation of the plan; shall maintain records and prepare reports of services rendered; and shall cooperate with health, **dental,** medical, nursing and welfare agencies and organizations, and with any other agency of this State charged with the administration of laws providing for the vocational or remedial rehabilitation of handicapped children.

SECTION 5—(Sub-Section "g")—to read as follows: The Commission shall have authority to provide for the expenditure of all funds for the administration and operation of the program as specified in this Act. This **includes** payment for **physician's** and **dentist's services as and when approved by the Oklahoma State Medical Association and the Board of Governors of Registered Dentists.**

SECTION 6. PROFESSIONAL ADVISORY COMMITTEE. The Commission shall appoint a Professional Advisory Committee, to be composed of **seven (7) members, four** (4) of whom shall be licensed doctors of medicine and one (1) of whom shall be a licensed dentist, **recommended by the Board of Governors of Registered Dentists, one (1) Hospital Administrator of a licensed general hospital, as recommended by the Oklahoma State Hospital Association;** and **one (1) licensed osteopath, as recommended by the Oklahoma Osteopathic Association.** Not less than four (4) members of the Committee shall be appointed from a list of not less than nine (9) names nominated for that purpose by the **Council of the Oklahoma State Medical Association, one of whom shall be the Chairman.**

SECTION 6—(Sub-Section "b")—to read as follows: The members of the Committee shall receive as compensation for their services a per diem fee of fifteen ($15.00) dollars for each day the Committee is in session and necessary travel expenses, to be paid from funds appropriated to the Commission. Meetings shall be called by the Commission or the Director, or **the Chairman of the Professional Advisory Committee, and there shall be at least four (4) meetings held each year.**

SECTION 6—(Sub-Section "c")—to read as follows: It shall be the function of the Committee to act as an Advisory body to the Commission to **establish** standards for professional services rendered to children under this program and to **establish** standards for hospital and convalescent care, and to advise on such other matters as may be referred to it by the Commission.

SECTION 7—POWERS OF COMMISSION—(Sub-Section "a")—The Commision is hereby authorized and empowered to approve or disapprove hospitals, convalescent homes, **nursing homes, or foster** and boarding homes, **which meet standards established by the Professional Advisory Committee,** and to contract for their services on a basis not to exceed their per diem cost basis. The Commission is hereby also authorized and empowered to approve or disapprove professional personnel, **which meet standards established by the Professional Advisory Committee,** for the various

types of services authorized and contemplated by this Act, and to contract for their services.

SECTION 7—(Sub-Section "b")—List **State Board of Medical Examiners before Optometry.**

SECTION 13. UNIVERSITY HOSPITALS REVOLVING FUND. All monies paid by the Commission to the Children's Memorial Hospital shall be deposited in the revolving fund of the University Hospitals, and **shall** be used for general operating expense of the Children's Memorial Hospital, including payment of personal services.

SECTION 14. APPROPRIATION. The Oklahoma Public Welfare Commission is hereby authorized to allocate from the State Assistance Funds a sum not to exceed one million **two hundred fifty thousand (1,250,000)** dollars per annum, or portion thereof which may be available for the purpose of carrying out the provisions of this Act; provided said funds shall be non-fiscal and shall be used from such allocation for purposes as prescribed in this Act.

SECTION 15—RESPONSIBILITY OF BUDGET OFFICER. The State Budget Officer is hereby authorized and directed to recognize any request of the Oklahoma Public Welfare Commission for such transfer on a monthly basis and he shall transfer from the State Assistance Funds to the State Crippled Children's Fund the amount requested prior to the allocation of funds to the various categories of assistance as now provided by law.

Nurses' Association Establishes Speakers Bureau

A Speakers Bureau was recently established by the Board of Directors of Oklahoma State Nurses' Association.

Persons appointed to this Bureau are nurses employed in the various fields of nursing. Purpose of the organization is to acquaint persons outside the profession with nursing in general, health needs of the state in relation to nursing, and to assist in recruiting qualified persons into the profession.

Members of the newly formed group are Mrs. Letha Billings, R.N., Box 388, Woodward; Mrs. Rachel Cooley, R.N., 717 North Columbia, Tulsa; Mrs. Grace Neilson, R.N., 1620 North East 46th, Oklahoma City; Miss Elaine McMinn, R.N., 700 Culbertson Drive, Oklahoma City; Mrs. Reba Shipley, R.N., 328 Brookline Place, Bartlesville; Mrs. Marguerite Berry, R.N., 615 East Okmulgee, Muskogee; Mrs. Johanna St. Clair, R.N., 408 Summit, Lawton; Miss Jaunita Proctor, R.N., 119 Northwest 14th, Oklahoma City; and Miss Clara Gerstenkorn, R.N., USPH Hospital, Talihina.

To secure a speaker, write to the Oklahoma State Nurses' Association, 1110 Cravens Building, Oklahoma City, or to the speaker directly.

51 Tulsa Doctors Move To New Building

Tenants of the new seven-story Doctors' Building at 21st Street and Lewis Avenue, Tulsa, were recently announced by Arnold H. Ungerman, M.D., president of the Twenty-First Street Building Corporation, owner of the structure.

Occupying the new building will be 51 physicians, four dentists, a prescription shop and a restaurant.

The physicians are: Sol Wilner, D. B. Lhevine, William Benzing, R. E. Nathan, Samuel Goodman, M. M. Cash, R. I. Lubin, Leonard L. Kishner, Irvin Braverman, E. S. Cohen, D. L. Brawner, William R. R. Loney, Theodore Turnbull, Herbert J. Forrest, E. O. Johnson, R. E. Dillman, John Ward.

K. C. Reese, L. L. Stokes, R. L. Anderson, I. H. Nelson, Leo Lowbeer, E. Philip Klein, R. D. Grubb, E. E. Palik, Vance Lucas, Roger E. Wehrs, R. W. Goen, W. J. O'Meilia, P. M. Schreck, R. A. Nelson, E. N. Lubin, J. D. Shipp, E. Malcolm Stokes, V. William Wood, A. H. Bungardt, William C. Alston, Robert W. Spencer, Matthew B. Moore, E. R. Shapard III, H. F. Flanigin, Arnold H. Ungerman, Milford S. Ungerman, Norman L. Dunitz, James B. Thompson, Paul O. Shackleford, C. S. Lewis, Robert G. Tompkins, R. M. Shepard, Jr., Harold A. White and D. L. Garrett.

Off-street parking for cars of 150 patients will be maintained east of the building. A lot to accommodate 100 cars of doctors and their employees will also be available.

TULSA PHYSICIAN HONORED

John Franklin Gorrell, M.D., (left), Tulsa eye-ear-nose and throat specialist, is seen as he receives a 50-year pin from Wilkie D. Hoover, M.D., Delegate from the Oklahoma State Medical Association to the American Medical Association. The presentation was in recognition of the completion of 50 years in practice by Doctor Gorrell in 1958. The pin was awarded at the February 9th meeting of the Tulsa County Medical Society.

Doctor Gorrell graduated from the University of Pennsylvania School of Medicine in 1908. He interned at Columbia Hospital in Pittsburgh and took his residency training at Manhattan E.E.N.T. Hospital in New York. Doctor Gorrell practiced at Homestead and Everett, Pennsylvania before coming to Tulsa in 1916. He served as President of Tulsa County Medical Society in 1930. Doctor Gorrell retired in 1956. His son, Benjamin F. Gorrell, M.D., practices in Tulsa.

1959 Delegates and Alternates

(Continued from Page 186)

NORTHWEST		
BEAVER	NO ENTITLEMENT	
DEWEY	NO ENTITLEMENT	
ELLIS	M. H. Newman, M.D., Shattuck	Walter Dersch, Jr., M.D., Shattuck
HARPER	NO ENTITLEMENT	
WOODWARD	R. A. McGrew, M.D., Woodward	R. G. Obermiller, M.D., Woodward
OKFUSKEE	D. M. Rose, M.D., Okemah	C. A. Carmack, M.D., Okemah
OKLAHOMA	Mark R. Johnson, M.D., Okla. City	Arthur Schmidt, M.D., Okla. City
	Robert C. Lawson, M.D., Okla. City	Elmer Musick, M.D., Okla. City
	Lynn Harrison, M.D., Okla. City	S. R. Shaver, M.D., Okla. City
	Ella H. Murray, M.D., Okla. City	Alvin Jackson, M.D., Okla. City
	Vernon D. Cushing, M.D., Okla. City	James S. Boyle, M.D., Okla. City
	Virgil Forester, M.D., Okla. City	H. T. Avey, M.D., Okla. City
	V. M. Rutherford, M.D., Midwest City	John W. DeVore, M.D., Okla. City
	E. E. Shircliff, M.D., Okla. City	J. J. Gable, M.D., Okla. City
	P. D. Casper, M.D., Okla. City	Robert J. Morgan, M.D., Okla. City
	Jack G. Glasgow, M.D., Okla. City	Charles E. Delhotal, M.D., Okla. City.
	E. Cotter Murray, M.D., Okla. City	Dick Lowry, M.D., Okla. City
	Paul D. Macrory, M.D., Bethany	John F. Kuhn, M.D., Okla. City
	David C. Lowry, M.D., Okla. City	C. Alton Brown, M.D., Okla. City
	Paul D. Erwin, M.D., Okla. City	J. Hartwell Dunn, M.D., Okla. City
	Martin H. Andrews, M.D., Okla. City	Ancel Earp, Jr., M.D., Okla. City
	Gerald L. Beasley, M.D., Okla. City	Rex Kenyon, M.D., Okla. City
	M. B. Glismann, M.D., Okla. City	Scott Hendren, M.D., Okla. City
	J. T. McInnis, M.D., Okla. City	John D. Ingle, M.D., Okla. City
	C. M. Bielstein, M.D., Okla. City	Charles H. Wilson, M.D., Okla. City
	A. C. Lisle, Jr., M.D., Okla. City	J. C. Amspacher, M.D., Okla. City
	R. E. Carpenter, M.D., Okla. City	Hubert M. Anderson, M.D., Okla. City
	Robert T. Sturm, M.D., Okla. City	R. D. Anspaugh, M.D., Okla. City
OKMULGEE	NOT REPORTED	
OSAGE	Vincent Mazzarella, M.D., Hominy	Rex Daugherty, M.D., Pawhuska
PAYNE	NOT REPORTED	
PAWNEE	NOT REPORTED	
PITTSBURG	Thurman Shuller, M.D., McAlester	G. M. Brown, Jr., McAlester
	F. T. Bartheld, M.D., McAlester	E. D. Greenberger, M.D., McAlester
PONTOTOC	NOT REPORTED	
POTTAWATOMIE	Horton E. Hughes, M.D., Shawnee	Francis A. Davis, M.D., Shawnee
	Francis P. Newlin, M.D., Shawnee	Louis E. Speed, M.D., Shawnee
ROGERS	NOT REPORTED	
MAYES	NOT REPORTED	
STEPHENS	NOT REPORTED	
TEXAS	NOT REPORTED	
CIMARRON	NO ENTITLEMENT	
TILLMAN	Jack D. Honaker, M.D., Frederick	R. G. Johnson, M.D., Frederick
TULSA	L. A. Munding, M.D., Tulsa	Robert T. Cronk, M.D., Tulsa
	Hugh Perry, M.D., Tulsa	G. R. Russell, M.D., Tulsa
	John E. McDonald, M.D., Tulsa	Byron L. Bailey, M.D., Tulsa
	Walter S. Larrabee, M.D., Tulsa	Felix R. Park, M.D., Tulsa
	Simon Pollack, M.D., Tulsa	Leo Lowbeer, M.D., Tulsa
	Harold J. Black, M.D., Tulsa	Edward L. Moore, M.D., Tulsa
	James C. Peters, M.D., Tulsa	Frank J. Nelson, M.D., Tulsa
	Charles E. Wilbanks, M.D., Tulsa	John C. Perry, M.D., Tulsa
	Paul O. Shackelford, M.D., Tulsa	James H. Neal, Jr., Tulsa
	Earl M. Lusk, M.D., Tulsa	Henry A. Brocksmith, M.D., Tulsa
	Ben F. Gorrell, M.D., Tulsa	Adolph N. Vammen, M.D., Tulsa
	Vincel Sundgren, M.D., Tulsa	Carl H. Guild, Jr., M.D., Tulsa
	F. L. Flack, M.D., Tulsa	Craig S. Jones, M.D., Tulsa
	N. C. Gaddis, M.D., Tulsa	Gifford H. Henry, M.D., Tulsa
WASHINGTON	Fred C. Wallingford, M.D., Bartlesville	Clair Liebrand, M.D., Bartlesville
	C. S. Huntington, M.D., Bartlesville	H. E. Denyer, M.D., Bartlesville
	James H. Elliott, M.D., Nowata	O. L. Grigsby, M.D., Nowata
WOODS	NOT REPORTED	
ALFALFA	NOT REPORTED	

A Pound of Prevention

Over 30% of the apparently healthy working population has remedial medical problems. This has been substantiated by statistics accumulated from the periodic health examination phase of a number of formalized industrial medical programs. When it is realized that a third of employed persons has correctable health defects, many of which are unknown to the individual, it is obvious that the re-examination program offers many benefits to a number of parties.

The benefits to the individual employee are (1) early detection of disease in its incipient and remedial stage, (2) determination of any marked change from a previously established health status, (3) to determine if the ordinary aging processes are being accelerated, and if so, why? and (4) the interval examination affords a most opportune time for the physician to discuss with the employee the health problems discovered and their significance. In the final analysis, this means job security, increased earning power and in general, a happier and more productive life for the employee.

The benefits which accrue to the employer are also numerous, a few of which are (1) increased employee efficiency through better job placement, reduction in absenteeism and turnover, and improved morale and physical well-being, (2) early detection of occupational and environmental problems. Ultimately, this means a considerable savings in dollars and cents to industry.

The voluntary periodic medical examination program as accepted by employee and employer today greatly overcomes the ordinary human tendency to neglect personal health maintenance. Detection of disease in its early stage means early referral to the family physician for definitive care.

Prepared by

OSMA Committee on Occupational Medicine

What's Your Hobby, Doctor?

The DOCTOR'S HOBBY SHOW has become one of the outstanding attractions at the OSMA ANNUAL MEETING. A project of the Woman's Auxiliary, the show offers physicians an excellent opportunity to display the products of their leisure time. If you have a hobby, don't keep it a secret . . . Show your colleagues what you can do . . . APPLY NOW!

Doctor's Hobby Show

O.S.M.A. Annual Meeting

Mayo Hotel

Tulsa

APRIL 20, 21, 22, 1959

Application For Hobby Show Space

53rd ANNUAL MEETING

OKLAHOMA STATE MEDICAL ASSOCIATION

DESCRIBE EXHIBIT, including information as to size, shape and value (insurance is provided):

IMPORTANT: Deliver Exhibit to Mayo Hotel by noon, April 19. Your Exhibit will be personally attended and insured at all times. It must be picked up by noon, April 22, when management responsibility ends.

MAIL THIS FORM TO:

Mrs. Wm. R. R. Loney, Chairman
Doctor's Hobby Show
2440 East 26th Place
Tulsa 14, Oklahoma

DPW Problems Answered By OSMA Committee

Two problems in regard to the operation of the medical care program for welfare recipients have been brought to the O.S.M.A.'s committee for recommendations, according to Mark R. Johnson, M.D., Chairman. The committee has considered these problems, which concern billing and diagnoses and has released in formation designed to clarify any misunderstandings.

Bill Patients for Service

A recurring problem for welfare fund recipients pertains to the handling of insurance benefits which are awarded to the policy holder through direct payments at the conclusion of treatment. Physicians who submit claims in such cases are advised to render statements to their patients in the usual manner for the full amount of their fee. This will serve to notify the patient that indebtedness has accrued and that pending action by third parties, the amount reflected in the statement is due. Should the Department of Public Welfare honor the claim with partial payment, such additional payments as may be made by the patient or his insurance company can be accepted by the physician in order to retire the remaining balance of the patient's account. In the event that such delayed payment exceeds the balance of the original statement for services, the surplus will be refunded to the Department of Public Welfare by the physician.

Diagnoses A to Z

Plaintive rumblings concerning alleged "dual diagnoses" have been heard in recent weeks. It has been stated that certain insurance companies are concerned about cases in which diagnoses submitted to their companies are not identical to the diagnoses (in the same cases) submitted on DPW claims and/or recorded in hospital case records. The Welfare Medical Care Committee has recently approved the following statement concerning this problem:

"We do not believe that any physician deliberately or willfully records misleading, improper or incomplete diagnoses, in any reports concerning cases under his care. It is appreciated, however, that in certain circumstances additional information developing at some later date may alter the original list of diagnoses in any report concerning his patient. We feel further that it is the responsibility of the insurance company to establish a clear understanding of the attending physicians' diagnoses and not the responsibility of the hospital, the patient or any other third party involved."

Glaucoma Identification Card

A glaucoma identification card for nationwide distribution was announced today by The National Medical Foundation for Eye Care as a major public service project.

The card, similar in purpose to the diabetes identification card, will alert examining physicians that the patient has glaucoma and is using drugs.

The names of the patient and of the ophthalmologist who prescribed the drugs, appear on the card, together with the prescription. This information alerts the examining physician to the patient's condition and the treatment he is undergoing and forestalls the use of any contra-indicated medication by the examining physician.

Glaucoma patients who run out of their prescribed medicine while away from home are able to get a new supply quickly, without interrupting treatment, an important factor in glaucoma therapy.

In addition to the prescription for drugs, the glaucoma card also carries the spectacle prescription of the patient, which enables him to replace broken lenses when away from home.

The National Medical Foundation for Eye Care glaucoma cards were printed as a public service by Abbott Laboratories, and are being initially distributed to physicians by the Laboratories. Packets of the cards may be obtained by writing to the Foundation office, 250 West 57th Street, New York 19, New York, or directly to Professional Services, Abbott Laboratories, North Chicago, Illinois.

Have You Heard

J. SAMUEL BINKLEY, M.D., Oklahoma City, will present a paper at the annual meeting of the Society of Head and Neck Surgeons, Washington, D.C., March 30 and 31.

ALLEN H. BUNCH, M.D., a 1950 graduate of the University of Oklahoma School of Medicine, is a new associate of the Jones Clinic, 216 North Fourth Street in Seminole.

HYMAN FRIEDMAN, M.D., formerly in practice in Mercedes, Texas, has opened his offices in Texhoma. Doctor Friedman spent two years in residency at San Antonio before beginning his practice in Mercedes.

ODIS A. COOK, M.D., has recently moved from Sulphur to Norman where he is associated with the Student Health Service.

LOUIS N. DAKIL, M.D., McAlester, has been named to the national board of trustees of the American Lebanese Syrian Associated Charities. Doctor Dakil has been active in the work of the ALSAC for the past several years.

Remodeling of quarters at Hillcrest Medical Center, Tulsa, to accommodate the $100,000 library of the Tulsa County Medical Society began early this month. The 12,500-volume library will occupy 2,610 square feet of space on the ground floor of the polio unit of the medical center at 12th and Troost Avenue.

JACK GREGSTON, M.D., of Marlow plans to open an office in Duncan soon. He will continue his practice and maintain his clinic in Marlow.

DONALD S. MISHLER, M.D., Tulsa, was a seminar instructor in plastic surgery of the head and neck in Mexico City and Acapulco during February. The seminar was sponsored by the American Otorhinologic Society for Plastic Surgery in cooperation with the Mexico Society of Otolaryngology and the University of Mexico.

J. N. OWENS JR., M.D., Oklahoma City, was elected a District Director of the South Central Association of Blood Banks at their first annual meeting in Austin, Texas, February 6 and 7.

ROBERT O. RYAN, M.D., formally opened his new clinic in Norman on Sunday, February 1.

RAYMOND ENGLES, M.D., Oklahoma City, has moved to Durant where he will be associated with his brother, LeRoy Engles, M.D., in the Engles Clinic.

A Basic Human Right

(Continued from Page 127)

prohibition. I appeal to you simply from a moral point of view. I have no personal interest other than an appeal for human rights. As far as prohibition working a hardship on me, it has not. There is no lack of opportunity to drink in this state.

Having been transferred from Illinois by a large company in October, 1957, I have found Oklahoma to be a fine place to live with the exception of this odious law. My wife, who is a native Oklahoman, and I are agreed. We feel so strongly about this matter that we will be forced to seek a transfer to another company location if this democratic method of changing an oppressive law fails.

Since I am not as virtuous as Socrates, who would obey a bad law, I have drunk in Oklahoma in the past and I intend to drink in the future. I do, however, refuse to raise my children in an atmosphere of disrespect for law.

Thank you for your attention to this matter.

Respectfully yours,
(s) Edward A. Quattrocki.

Book Review

BONE TUMORS. 1959, Louis Lichtenstein, M.D. Blue cloth cover, pg. 402, $12.00: The C. V. Mosby Co.

This book represents the continued advancement and clarification of bone tumor pathology that is progressing so much in recent years.

The classification presented by Lichtenstein is clear cut and all inclusive. Each clinical entity is well represented with clinical findings, x-ray findings and pathology, gross, microscopic, and prognosis. The illustrations, which are numerous, are of excellent quality including reproductions of x-rays films and photomicrographic.

Many non neoplastic bone conditions often confused with bone tumors are covered in Appendix I, Appendix II, and a new feature covers tumors of synovial joints, bursal, and tendon sheaths.

This book is an excellent source book with which one dealing with bone tumors should be familiar.—*Edwin R. Maier, M.D.*

Books Received

The following books have been received by *The Journal* office. As space permits and the context warrants, books will be reviewed.

Atrial Arrhythmias, Digitalis & Potassium. Bernard Lown, M.D. and Harold D. Levine, M.D. Landsberger Medical Books, Inc., New York, New York. Price $6.90.

Amino Acids and Peptides with Antimetabolic Activity. G. E. W. Wolstenholme, & Cecilia M. O'Connor, Little, Brown & Co., Boston, Massachusetts. Price $8.75.

Bending The Twig. Augustin G. Rudd, American Book-Stratford Press, New York, New York. Price $3.95.

Biophysical Principles of Electrocardiography. Robert H. Bayley, M.D., A Hoeber Harper Book, New York, New York. Price $8.00.

The Birth of Normal Babies. Lyon P. Strean, Ph.D., Twayne Publishers, New York, New York. Price $3.95.

Bone Tumors. Louis Lichtenstein, M.D., C. V. Mosby Co., St. Louis, Missouri. Price $12.00.

Breast Cancers. Albert Seagaloff, C. V. Mosby Company, St. Louis, Missouri. Price $5.00.

Cancer and the Atomic Age. Clement A. Tavares, M.D., Vantage Press, Inc., New York, New York. Price $3.50.

The Care of the Pediatric Patient. E. V. Cowdry, C. V. Mosby Company, St. Louis, Missouri. Price $8.00.

Chemistry and Biology of Mucopoly-Saccharides. G. E. W. Wolstenholme and Maeve O'Connor, Little, Brown & Company, Boston Massachusetts. Price $8.50.

Clinical Enzymology. Gustav J. Martin, Sc. D., Little, Brown & Company, Boston, Massachusetts. Price $6.00.

Clinical Obstetrics & Gynecology. Allan C. Barnes, M.D., and Curtis J. Lund, M.D., Paul B. Hoeber, Inc., New York, New York.

Clinical Obstetrics and Gynecology, Genital Cancer/Operative Obstetrics. Daniel G. Morton, M.D. and J. Robert Willson, M.D., Paul B. Hoeber, Inc., New York, New York. Price $18.00.

The Cerebrospinal Fluid. Cecilia M. O'Connor and G. E. W. Wolstenholme, Little, Brown & Company, Boston, Massachusetts. Price $9.00.

Correlative Neuroanatomy & Functional Neurology. Joseph G. Chusid, M.D. and Joseph J. McDonald, M.D., Lange Medical Publications, Los Altos, California. Price $4.50.

Dietary Prevention & Treatment of Heart Disease. John W. Gofman, M.D., Alex V. Nichols, Ph.D., and E. Virginia Dobbin, G. P. Putnam's Sons, New York, New York. Price $3.95.

The Doctor Business. Richard Carter, Doubleday & Company, New York, New York. Price $4.00.

Electrocardiography. Michael Bernreiter, M.D., J. P. Lippincott Company, Philadelphia 5, Pennsylvania. Price $5.00.

Emergency War Surgery. U. S. Department of Defense, U. S. Government Printing Office, Washington, D.C. Price $2.25.

Epilepsy. Manfred Sakel, Philosophical Library, New York, New York. Price $5.00.

Fat Consumption and Coronary Disease. T. L. Cleave, M.R.C.P. (Lond.) Philosophical Library, New York, New York. Price $2.50.

Fifty Years of Neurosurgery. Earnest Sachs, M.D., Vantage Press, Inc., New York, New York. Price $3.50.

The Fight for Fluoridation. Donald R. McNeil, Oxford Press, New York, New York. Price $5.00.

Forensic Medicine. Keith Simpson, M.D., Williams and Wilkins Company, Baltimore, Maryland. Price $7.00.

Harmone Production in Endocrine Tumors. E. W. Wolstenholme and Maeve O'Connor, Little, Brown and Company, Boston, Massachusetts. Price $9.00.

How to Live with Diabetes. Henry Dolger, M.D. and Bernard Seeman, W. W. Norton & Company, New York, New York. Price $3.50.

Ideals in Medicine. Vincent Edmunds, M.D., and C. Gordon Scorer, M.D., Christian Medical Society, New York, New York. Price $3.00.

Know Your Doctor. Paul E. Craig, M.D., New York, New York. Price $3.50.

Love, Skill & Mystery. Theodore Bovet, Doubleday & Company, New York, New York. Price $3.50.

Memoirs of a G. P. Otis Marshall, M.D., Vantage Press, Inc., New York, New York. Price $3.50.

Negroes and Medicine. Dietrich C. Reitzes, Harvard University Press, Cambridge, Massachusetts. Price $7.00.

The Neuroses and Their Treatment. Edward Podolsky, M.D., Philosophical Library, Inc., New York, New York. Price $10.00.

New and Nonofficial Drugs. Evaluated by the AMA Council on Drugs, J. B. Lippincotts Company, Philadelphia, Pennsylvania.

Physical Diagnosis. Prior and Silberstein, C. V. Mosby Company, St. Louis Missouri. Price $7.50.

A Primer on Common Functional Disorders. Jack W. Fleming, M.D., Little, Brown & Company, Boston, Massachussets. Price $5.00.

Progress in Peaceful Uses of Atomic Energy. United States Atomic Energy Commission, U.S. Printing Office, Washington, D.C. Price $1.25.

Schizophrenia. Manfred Sakel, Philosophical Library, New York, New York. Price $5.00.

The Sedimentation Rate of Human Erythrocytes. Frank Wright, M.D., New York Vantage Press, Washington, D.C. Price $2.50.

So You Have Glaucoma. Everett R. Viers, M.D., Grune & Stratton, Inc., New York, New York. Price $2.75.

Therapeutic Uses of Adhesive Tape. Johnson and Johnson, New Brunswick, New Jersey.

Tumors of the Liver and Intrahepatic Bile Ducts. Hugh A. Edmondson, M.D., Armed Forces Institute of Pathology, Washington, D.C.

What We Do Know About Heart Attacks. John W. Gofman, M.D., G. P. Putnam's Sons, New York, New York. Price $3.50.

You Can Increase Your Heart-Power. Peter J. Steincrohn, M.D., Doubleday & Company, Garden City, New York. Price $3.95.

25 YEARS AGO

Articles published in *The Journal* of the Oklahoma State Medical Association March, 1934.

CARCINOMA OF THE UPPER COLON IN CHILDHOOD

Roscoe Walker, M.D., John F. Daly, M.D.
Pawhuska

Carcinoma rarely enters into the differential diagnosis of obscure complaints during the period of childhood and perhaps rightly so. To be sure, the incidence of cancer in persons below the age of fifteen years is so low that reported cases are regarded as oddities. Chajutin states that in 1929 the Committee for Cancer Research had under observation 12,179 cases of cancer but there was no case recorded in a child. In 1914 Redko was able to find but 536 cases of carcinoma during the period of youth in a review of the literature up to that date. 831 cases of cancer reviewed by Janucz revealed only four instances below the age of twenty years. Similarily, Matzen in reporting 8054 cancer cases from Bavaria detected but seventeen cases during the first ten years of life and found but one case of carcinoma. In Odessa, Medwedew saw 1181 cases of cancer in twenty-five years of observation but recorded none below the age of ten years.

The case herewith reported was seen by us and operated by one of us (RW).

The patient was a boy of mixed parentage (Indian-Greek-U. S.), who was five years of age. He was first seen on May 30, 1932. At which time he complained of cramp-like pain in the lower abdomen of two months duration. This pain lasted only a few minutes and recurred at intervals varying from an hour to a day. Examination at that time was negative in every respect except for a slight tenderness in the right lower quadrant of the abdomen. On June 6, 1932, the boy was seen again at which time the pain was recurring at more frequent intervals. He had been nauseated and had vomited on two occasions. He had had an attack of diarrhea lasting but one day. There had been no melena. The blood and urine were normal, as were the pulse and temperature. The stools were examined for parasites but none were found. At this examination it was thought that a mass could be palpated to the right of the umbilicus. Exploratory operation was advised at this time. On July 1, 1932, the abdomen was opened by a right rectus incision and a hard, irregular tumor was found at the ileo-cecal junction. It was about the size of an English walnut. The mass folded into the cecum, forming a valve-like obstruction. This was assumed to be the cause of the intermittent pain of which the patient complained. Another tumor about eight inches in circumference was found in the mesentery of the ascending colon. This was deemed to be inoperable and left untouched. The terminal ileum and the cecum were resected to relieve the obstruction and an end-to-side anastamosis done. Following operation the growth increased in size rapidly. Loss of weight and anemia became marked. By August tenth, definite evidences of pulmonary metastasis (right lower lobe) were demonstrable. At the same time the liver was found to be notably enlarged and to extend below the umbilicus where its border could be felt to intersect that of another mass, the latter presumably the primary lesion. The boy failed rapidly in strength but at no time was there any evidence of obstruction. He died of cachexia on August 29, 1932, about five months after the onset of his symptoms. The sections of the tumor removed at operation revealed a well marked adenocarcinoma.

MISCELLANEOUS ADVERTISEMENTS

FOR SALE: Jones BMR Machine, six years old, used very little. Contact A. M. Brown, Jr., M.D., Perry, Oklahoma.

FOR SALE: 1 Mattern x-ray with fluoroscope and attachments, 100 M.A., excellent condition, regularly serviced by G.E.; 1 Beck Lee ECG, old model; 1 Microscope; 1 Leitz Photo-Electric Colorimeter; 1 Junior Centrifuge, practically new; various laboratory supplies. J. P. Irby, M.D., 819 E. Broadway, Altus.

GOOD OPPORTUNITY FOR YOUNG PHYSICIAN wanting to do general practice. Another physician is needed at once in this prosperous county-seat city of 3,000, with an equally-prosperous farming and ranching area surrounding it. One of the best-equipped, modern small hospitals in the state. Long-term financing available for equipping office and remodeling it to suit the person applying. Will offer every assistance also in finding comfortable housing. Call or write Don Johnson, Secretary-Manager, Pawnee, Oklahoma, Chamber of Commerce.

WANTED: Medical Officer to work twenty hours a week in administering medical certification of airmen. Contact E. J. Anderson, Chief, Personnel Division, Civil Aeronautics Administration, P.O. Box 1689, Ft. Worth, Texas.

Deaths

O. W. Rice, M.D.
1871-1959

O. W. Rice, 87-year-old pioneer Oklahoma physician, died in McAlester on February 3, 1959.

A native of Johnson County, Missouri, Doctor Rice graduated from Rush Medical College in 1897. Settling in the Indian Territory in 1898, he began his practice in Alderson, moving to McAlester in 1923, where he continued his practice until retirement in 1956.

In 1949, Doctor Rice was recognized for his years of service to the profession when he was presented with an Honorary Life Membership from the Oklahoma State Medical Association.

Charles L. Rogers, M.D.
1876-1959

Charles L. Rogers, 82-year-old, retired physician, died January 26, 1959, in Bartlesville.

A pioneer Oklahoma physician, Doctor Rogers was born in McKinney, Texas, on November 3, 1876. He received his medical degree from George Washington University in St. Louis and began his practice in 1910 in Beaver County. He later practiced in Woods and Alfalfa Counties.

Doctor Rogers was a former member of the Oklahoma State Medical Association.

B. T. Bitting, M.D.
1868-1959

B. T. Bitting, 91-year-old pioneer Enid physician, died on January 26, 1959.

Born in Rural Hill, North Carolina, in 1868, Doctor Bitting received his medical degree in 1895 from the Baltimore Medical College which later become the University of Maryland.

Doctor Bitting came to Enid in 1914 and retired from practice in 1944 after 50 years of continuous practice. He was an Honorary Member of the Oklahoma State Medical Association.

C. P. Chumley, M.D.
1890-1959

C. P. Chumley, M.D., a resident of Chickasha for the past five years, died on March 1, 1959. A native of Collinsville, Alabama, Doctor Chumley graduated from the University of Oklahoma School of Medicine in 1916.

After twenty years of practice in Duncan, Doctor Chumley served on the staffs of Eastern State Hospital at Vinita and Fort Supply Hospital. Later he was associated with the student health service at the University of Oklahoma and was also city and county health director in Chickasha.

William Wilbrun Kerley, M.D.
1871-1959

William Wilbrun Kerley, 87-year-old, retired Anadarko physician, died February 28.

A native of Blue Mountain, Arkansas, Doctor Kerley graduated from the University of Arkansas School of Medicine in 1898. He began his practice in Anadarko in 1901, retiring in 1945.

In recognition of his years of service to the profession, Doctor Kerley was presented with an Honorary Membership in the Oklahoma State Medical Association in 1946.

George A. LaMotte, M.D.
1877-1959

George A. LaMotte, 82 year-old pioneer Oklahoma City physician, died on March 1.

A graduate of Philadelphia's Jefferson Medical College in 1900, Doctor LaMotte began his practice in Oklahoma City the following year, where he remained until his retirement in 1955.

Doctor LaMotte was professor emeritus at the University of Oklahoma School of Medicine. In 1951, he was honored for his years of service to the profession when he was presented a Life Membership in the Oklahoma State Medical Association.

PHYSICIAN PLACEMENT

General Practice

Albert Stanley Bailey, Jr., M.D., P.O. Box 1381, Westhampton Beach, L. I., New York, age 28, married, graduated from University of Oklahoma, 1955, presently in military service, will be available May, 1959.

Johnny Bill Delashaw, 1905 1st Avenue, N., Texas City, Texas, age 25, married, graduated from University of Texas Medical Branch, 1959, will be available upon completion of internship, July, 1960.

John W. Kennard, M.D., 20 Olson Lane, Fort Rucker, Alabama, age 26, married, graduated from Bowman Gray School of Medicine, 1956, presently in military service, will be available September, 1959.

James W. McDoniel, M.D., 13-B Thompson Street, Langley Air Force Base, Virginia, age 27, married, graduated from Oklahoma University School of Medicine, 1956, will be available July 1, 1959.

Robert Emmett Myers, M.D., 872 Ravine Drive, Cleveland 12, Ohio, age 28, married, graduated from University of Arkansas, 1955. Would like to do general practice with emphasis on pediatrics, veteran, will be available September, 1959.

Edwin Ruben Reinschmiedt, Lt., MC, USNR, BOQ, Alameda Naval Air Station, California, age 30, married, graduated from University of Oklahoma, 1956, presently in military service, will be available June 15, 1959.

Wyatt Bibb Pouncey, M.D., 118 Louise Lane, San Mateo, California, age 34, married, graduated from University of Alabama, 1950, veteran, available immediately.

Robert Glenn White, Jr., M.D., 431 Saratoga, San Antonio, Texas, age 26, married, graduated from University of Oklahoma, 1956, presently in military service, will be available August 2, 1959.

John D. Wise, M.D., Booneville, Arkansas, age 30, married, graduated from University of Arkansas, 1954, veteran, available immediately.

Gerald C. Zumwalt, M.D., 1701 Avenue P, Del Rio, Texas, age 27, married, graduated from University of Oklahoma, 1956, veteran, will be available July, 1959.

Internal Medicine

Oscar C. Beasley, Jr., M.D., University Hospitals, Iowa City, Iowa, age 31, married, graduated from Vanderbilt University, 1952, veteran, will be available July 1, 1959.

William S. Harrison, M.D., 2623 Pittsfield Blvd., Ann Arbor, Michigan, age 31, married, graduated from University of Oklahoma School of Medicine, 1953, veteran, will be available September 1, 1959.

Locum Tenens

Don Allen Mills, M.D., 3911 Burns Place, S.E., Washington, D.C., age 34, married, veteran, graduated from Georgetown University School of Medicine, 1958, wants to do general practice for two years prior to specialized training. Will be available July 1, 1959.

Neurology

Kenneth C. Duncan, M.D., St. Luke's Hospital, Chicago, Illinois, age 30, married, graduated from the University of Oklahoma, 1955, veteran, will be available July, 1959.

Obstetrics and Gynecology

Milton Gardner Mutch, Jr., M.D., 423 Mills Avenue, Fargo, North Dakota, age 31, married, graduated from University of Minnesota, 1955, will be Board eligible upon completion of fellowship, veteran, will be available July 1, 1959.

Pediatrics

Prentiss Edwards Findlay, M.D., 1500 Wakefield Place, New Orleans 22, Louisiana, age 29, married, graduated from Emory University, Atlanta, 1954, noneligible for military service, will be available July 15, 1959.

Surgery

(Name on Request) 32 years old, married, graduated from Tulane, 1952, veteran, board eligible in surgery.

Valerio J. Federici, M.D., 2401 West Toronto Street, Philadelphia, Pennsylvania, age 36, married, graduated from Jefferson Medical College, 1948, veteran, is now available.

Owen Foster Kline, Jr., M.D., 4712 Warrington Drive, Flint, Michigan, married, graduated from University of Colorado, 1954, not eligible for military service at the present time, will be available July 1, 1959.

General Surgery

Clyde William Draughon, M.D., McGuire Hospital, Box 27, Richmond, Virginia, age 35, married, graduated from University of Oklahoma School of Medicine, 1954, veteran, will be available July 1, 1959.

Tuberculosis

Helen C. Sharp, M.D., 620½ N. Broadway, Pittsburgh, Kansas, single, graduated from University of Kansas, 1928, prefers to do industrial or student health work and is presently available.

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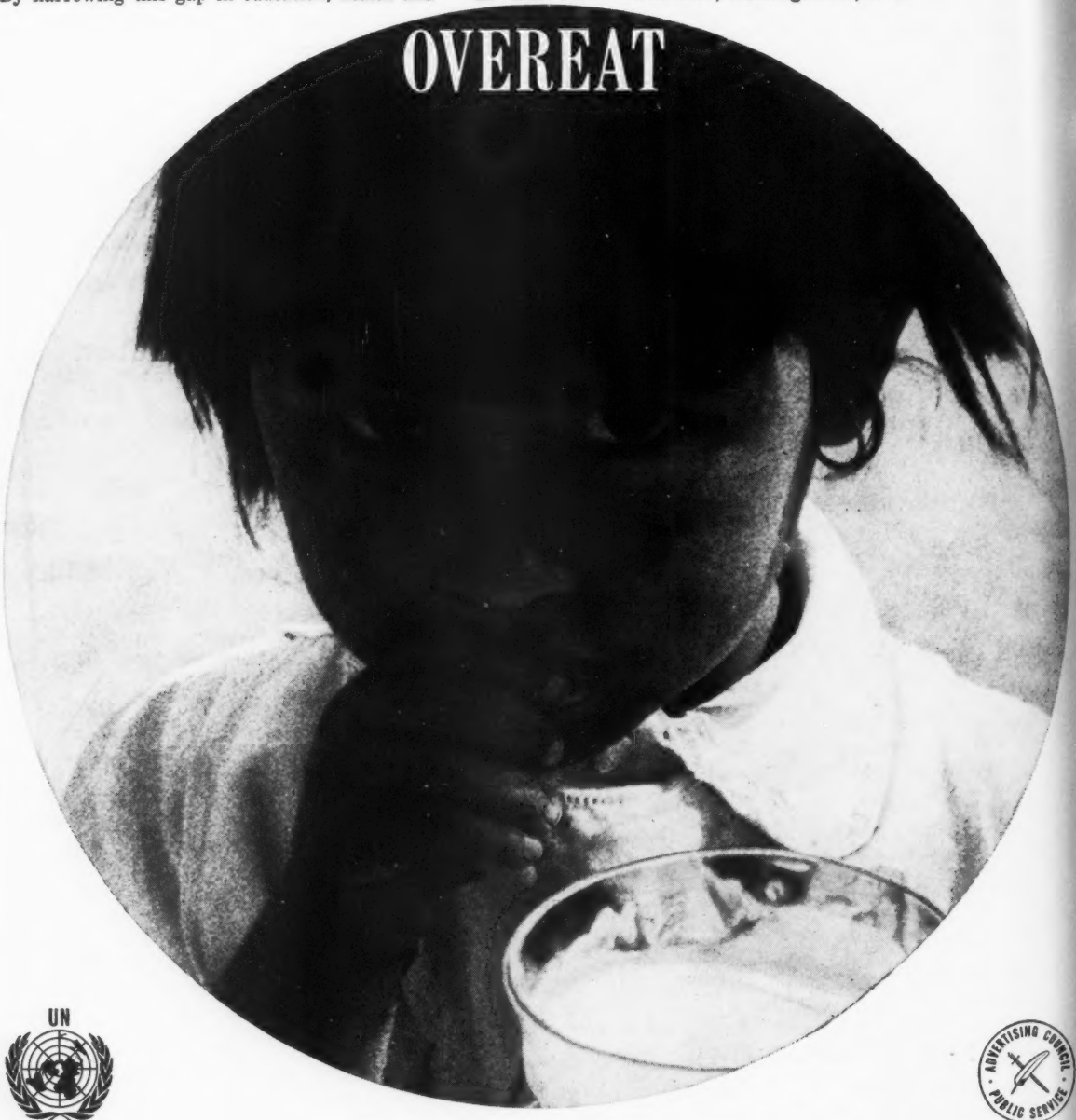

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